Adolescent Smoking in Maryland:
A Unique Approach to Prevention

Overview

Prevalence of cigarette smoking is commonly used to measure the effectiveness of tobacco control, prevention, and cessation efforts. However, prevalence rates are an insensitive measure of the activities and experiences that increase an adolescent's risk for becoming a smoker. A theory called the Transtheoretical Model describes how adolescents change their behavior, in this case starting to smoke cigarettes.[1] According to this theory, adolescents move toward cigarette smoking through a series of stages. This concept of behavior change is called the Stages of Smoking Initiation. These Stages offer a new way to think about smoking initiation given that they take into account smoking-related attitudes and intentions, as well as actual smoking behavior.

Differences exist in the Stages of Smoking Initiation profile between counties in Maryland. In addition, there are differences in the Stages of Smoking Initiation profiles within counties among Middle School and High School students. These differences have direct implications for smoking prevention in Maryland counties. In order to maximize prevention efforts, interventions should be adapted to focus on the Stages of Smoking Initiation. Adapting prevention strategies to specific counties in this way provides a unique challenge for practitioners statewide. This manual offers insights and recommendations for how this can be done.

The main objectives of this manual are:

- To describe differences in the Stages of Smoking Initiation profiles between counties and within counties based on Middle School and High School status among adolescents in Maryland

- To identify key prevention strategies for each Stage of Smoking Initiation

- To demonstrate that certain intervention components are more appropriate for some Stages of Smoking Initiation than others

- To show how existing CDC-approved curricula can be adapted to the Stages of Smoking Initiation

This manual was designed to provide county practitioners with an understanding of their adolescent population using the Stages of Smoking Initiation profile and to use this information to create more successful smoking prevention efforts for their county.

How Adolescents Start Smoking: The Stages of Smoking Initiation

Behavior changes related to cigarette smoking, including both initiation and cessation, are often viewed as occurring in a series of stages.[1] According to the Transtheoretical Model adolescents move through five Stages of Smoking Initiation on the road to developing a regular pattern of behavior: Precontemplation, Contemplation, Preparation, Action, and Maintenance.[2]

Precontemplation

Precontemplation describes the stage in which an adolescent is not considering smoking. An adolescent in Precontemplation is a non-smoker who is not thinking about smoking any time in the future.

Contemplation

As an adolescent enters **Contemplation**, he or she becomes more aware of cigarette smoking, is open to considering smoking, and/or experiences some desire to experiment with cigarettes. This stage describes a large number of adolescents who think about trying smoking, but lack the commitment to adopt cigarette smoking.

Preparation

The **Preparation** stage includes adolescents who not only are interested in smoking, but also have some plan to smoke in the near future. Someone in the Preparation Stage of Smoking Initiation might seek out others who smoke and they may begin to experiment with cigarette smoking.

Action

The **Action** stage is defined by a pattern of regular smoking behavior lasting up to six months. If smoking is not considered rewarding, adolescents may move back into one of the earlier Stages of Smoking Initiation.

Maintenance
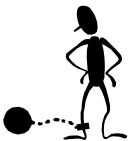
During the **Maintenance** stage, adolescents incorporate cigarette smoking into their daily lives. Adolescents in this stage have an established pattern of regular smoking that has lasted for more than six months.

Adolescents who are further along in the Stages of Smoking Initiation are at greater risk for cigarette smoking. Preventing adolescents from moving forward in the Stages of Smoking Initiation will slow or inhibit the progression to regular, maintained cigarette smoking.

Movement through the Stages of Smoking Initiation

Using the Transtheoretical Model as a guide, several other factors help us understand smoking initiation: Processes of Change and Markers of Change.[1] The *Processes of Change* are coping mechanisms that an adolescent uses as he or she moves through the Stages of Smoking Initiation (see Table 1). There are two types of processes:

- **Experiential processes** represent the adolescent's thoughts and emotions regarding their cigarette smoking

- **Behavioral processes** represent the actions and activities that adolescents do as they start to smoke cigarettes

Table 1. Processes of Change[1]

Experiential Process	Definition
Consciousness raising	Increasing **knowledge** about self and cigarette smoking
Emotional Arousal	Experiencing **feelings** about the smoking behavior of oneself and others
Environmental reevaluation	Recognizing how one's cigarette smoking **impacts** others and their environment
Social liberation	Noticing **social norms** that support smoking initiation in society
Self-reevaluation	**Rethinking** how cigarette smoking fits with personal values
Behavioral Process	**Definition**
Helping relationships	Seeking **support** from others who reward one's smoking
Stimulus control	Establishing **cues** that support cigarette smoking
Conditioning	Making new **connections** between cues and smoking
Reinforcement management	Creating **rewards** for cigarette smoking
Self-liberation	Making a **decision** to begin smoking

There are also *Markers of Change* that show movement through the Stages of Smoking Initiation. These Markers of Change include the pros and cons of decisional balance, temptation to smoke, and self-confidence not to smoke.

Decisional balance is the weighing of the costs and benefits associated with smoking. The benefits of smoking are that it is pleasurable, relaxing, relieves tension, and increases concentration while costs associated with smoking are that it is hazardous to one's health, it bothers others, it is expensive, and it negatively affects the adolescent's physical appearance. As the pros of smoking increase and the cons of smoking decrease, adolescents are at a greater risk for smoking.

Decisional Balance for Cigarette Smoking

Cons
- Hazardous to one's health
- Bothers others
- Expensive
- Negatively affects physical appearance

Pros
- Pleasurable
- Relaxing
- Relieves tension
- Increases concentration
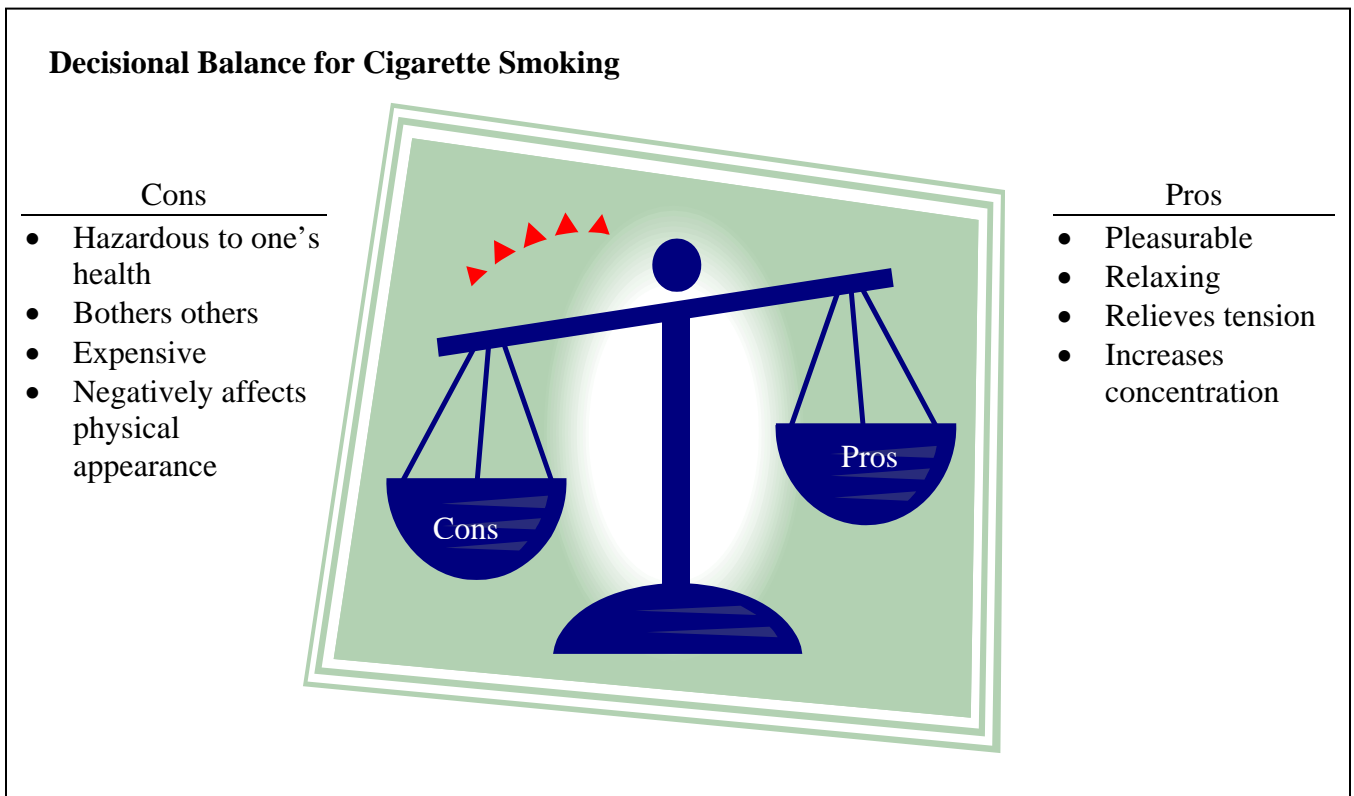
Temptation to smoke represents the adolescent's desire to smoke cigarettes in different situations. The degree of temptation to smoke differs based on the situation. Adolescents who report high levels of temptation in certain situations may be more likely to begin smoking when faced with these situations. For example, an adolescent may be more tempted to smoke at a party among friends who smoke than after dinner with their non-smoking family.

Self-Confidence represents an adolescent's belief in his or her ability <u>not</u> to smoke in a given situation. Adolescents who report high self-confidence not to smoke, across situations, are less likely to start smoking.

Risk and Protective Factors

There are a lot of Risk and Protective factors both within and around adolescents for beginning to smoke cigarettes.[1, 3] We can understand these factors by looking at how they affect movement through the Stages of Smoking Initiation. Risk factors increase an adolescents risk for moving through the Stages of Smoking Initiation, toward smoking initiation, whereas Protective factors prevent movement through the Stages of Smoking Initiation, away from starting smoking. Common risk and protective factors are provided in Table 2.

Table 2. Key Factors Associated with Risk and Protection

Risk Factors	Protective Factors
Family Members who Smoke Cigarettes	Academic Achievement
Friends who Smoke Cigarettes	High Self-Esteem
Deviant Behavior	High Self-Confidence
Poor Coping Skills	Good Relationship with Parents
Poor Social Skills	Family Processes (i.e., parental rules, consistent parenting, and family attachment)
Plans to Smoke in the Future	Engaging in Other Activities
Owning Promotional Smoking Merchandise	Limited Access to Cigarettes
Exposure to Smoking in Movies	

Risk and Protective factors also interact with each other further influencing an adolescent's movement through the Stages of Smoking Initiation. This interaction can be thought of as a balancing act for the adolescent with risk on one side and protection on the other.

Adolescent Cigarette Smoking

Awareness of Risk and Protective factors allows us to understand how adolescents move from one Stage of Smoking Initiation to another. It is this knowledge that will help us design better prevention efforts as we will be able to see where adolescents are within the Stages of Smoking Initiation and adapt our efforts based on that information.

Adolescent Smoking in Maryland

For the present manual, we analyzed data from 104,843 adolescents across the state of Maryland and grouped them according to their Stage of Smoking Initiation (see *Adolescent Smoking in Maryland 2000-2002: An analysis of the Stages of Smoking Initiation by county with suggestions for prevention strategies* for more information[4]). Our goal for these analyses was to see where Maryland's adolescents were in the process of smoking initiation, in both Middle and High School and to look at differences in the Stages of Smoking Initiation profiles among Maryland counties.

First, students were staged for smoking initiation based on their behaviors, attitudes, and intentions regarding cigarette smoking. This resulted in five Stages of Smoking Initiation. Each stage was created from questions taken from the 2000 and 2002 Maryland Youth Tobacco Surveys (MYTS).[5,6]

Definition of Stages of Smoking Initiation:

- Precontemplation (PC) – Youth who are not currently smoking and have no thoughts of smoking a cigarette within the next year. This includes both youth who have never smoked a whole cigarette in their entire life and youth who have smoked less than 100 cigarettes in their entire life, but have not smoked in the past 30 days.
- Contemplation (C) – Youth who are not currently smoking but have some thoughts about smoking a cigarette within the next year. This includes both youth who have never smoked a whole cigarette in their entire life and youth who have smoked less than 100 cigarettes in their entire life, but have not smoked in the past 30 days.
- Preparation (P) – Youth who have tried more than one puff from a cigarette but have smoked less than 100 cigarettes in their lifetime, who may be currently smoking (5 days or less out of the past 30 days), and have expressed some thoughts of smoking a cigarette within the next year
- Action (A) - Youth who have smoked more than 6 cigarettes in their entire life, and have smoked for more than 6 but less than 20 days during the past 30 days, and have expressed some thoughts of smoking a cigarette within the next year
- Maintenance (M) - Youth who have smoked more than 100 cigarettes in their entire life, and have smoked on 20 or more days during the past 30 days, and have expressed some thoughts of smoking a cigarette within the next year

Next, we analyzed data to determine where Maryland adolescents were in the process of smoking initiation. Our findings are presented in Table 3. This table shows the percentages of adolescents within each Stage of Smoking Initiation, averaged across the state of Maryland. Included within this table, is the absolute change of the percentage of adolescents in each stage between 2000 and 2002. The absolute change value is calculated by subtracting the percentage of adolescents within in a stage at 2000 from the percentage of adolescents in that stage in 2002. These numbers represent how the Stages of Smoking Initiation profiles have changed over time within the state of Maryland. For example, the statewide absolute change for Middle School students in the Maintenance stage was -0.3% (i.e., 1.1% - 0.8%), representing a decrease in that stage from 2000 to 2002.

Table 3. Statewide Averages for the Stages of Smoking Initiation

Statewide	2000 (%)					2002 (%)				
	PC	C	P	A	M	PC	C	P	A	M
MS	74.5	20.4	2.6	1.5	1.1	77.6	18.6	1.9	1.1	0.8
HS	55.2	24.4	5.9	5.0	9.5	59.5	24.4	5.0	4.3	6.8

Statewide	Absolute Change from 2000 to 2002 (%)				
	PC	C	P	A	M
MS	3.1	**-1.8**	**-0.7**	**-0.4**	**-0.3**
HS	4.3	0.0	**-0.9**	**-0.7**	**-2.7**

Numbers in **bold** represent a decrease from 2000 to 2002

Overall, there was a change in percentage of students within each Stage of Smoking Initiation from 2000 to 2002 in Maryland. Specifically, there were increases in the percentage of Middle School and High School students in Precontemplation from 2000 to 2002. This suggests an overall reduction in movement through the Stages of Smoking Initiation. The percentage of Middle School and High School students in all other Stages of Smoking Initiation either stayed the same or decreased from 2000 to 2002.

It is important to note that although this pattern is similar for both Middle School and High School, there are drastic differences in the percentages of students in each stage by school status.

In Maryland's Middle Schools:
- Approximately 95% of Middle School students did not smoke cigarettes in 2000 or 2002. While only 5% of Middle School students reported some smoking, it is important to remember that this represents more than **2,000** Middle School students in Maryland.
- Movement within the Stages of Smoking Initiation was minimal among Middle School students between 2000 and 2002. This suggests that more effective prevention efforts in Middle School are needed.

In Maryland's High Schools:
- Approximately 80% of High School students did not smoke cigarettes in 2000 or 2002. More than 20% of High School students reported some smoking, representing over **9,000** High School students in Maryland.
- The majority of reduction in the Maintenance stage occurred among High School students. For example, there was a 2.7% decrease in High School whereas there was only a 0.3% decrease in Middle School.

- Similarly, while the percentages of both Middle School and High School students in Precontemplation increased from 2000 to 2002, the greatest increase was among High School students.

Summary of Statewide Analyses:
- Examination of the Absolute Change values presented in Table 3 reveals that movement through the Stages of Smoking Initiation toward regular smoking (e.g., percentages of youth in Action and Maintenance) has decreased over time.
- These findings indicate good progress in reducing movement through the Stages of Smoking Initiation among adolescents in the state of Maryland overall.
- However, there was more progress among High School students than Middle School students.

The findings from Table 3 provide evidence for the importance of examining Stage of Smoking Initiation separately for Middle School and High School. However, an examination of the statewide averages may not provide a realistic portrayal of cigarette smoking, perhaps over or under-estimating smoking among adolescents in specific counties. Examining differences in the Stages of Smoking Initiation profiles within counties in Maryland allows for a more accurate view of adolescent smoking initiation in Maryland. Identification of the Stages of Smoking Initiation profiles for counties in Maryland allows county practitioners and prevention planners to see where their adolescents are in the Stages of Smoking Initiation and how their county compares to statewide averages.

Adolescent Smoking within Counties in Maryland – How Does this Apply to Your County?

The following table is provided for people like you, practitioners and prevention planners within Maryland counties, to determine where your adolescents are in terms of smoking initiation and how your county profile compares to the statewide profile for the Stages of Smoking Initiation. Table 4 will give you a clearer picture of smoking initiation among adolescents in your county!

Our goal for these analyses was to highlight differences in the Stages of Smoking Initiation profiles among counties in the state of Maryland. Table 4, which is provided below, includes the same information as the statewide average table (Table 3), but now they are listed separately for each county in Maryland. This table shows the percentage of adolescents within each stage by Middle School and High School for each of your counties. The statewide averages are also included as the last entry in the table to allow for comparisons between specific counties and the statewide averages.

Don't become overwhelmed – It's not hard!

Table 4. Absolute Change Over Time in Stages of Smoking Initiation by County of Residence and School Status

	2000					2002					Absolute Change: 2002-2000				
	PC	C	P	A	M	PC	C	P	A	M	PC	C	P	A	M
Allegany															
Middle School	70.5%	22.2%	3.7%	1.8%	1.8%	76.3%	17.8%	2.5%	1.5%	1.9%	5.8%	-4.4%	-1.2%	-0.3%	0.1%
High School	44.4%	21.7%	5.8%	8.6%	19.6%	52.5%	18.9%	5.8%	6.3%	16.5%	8.1%	-2.8%	0.0%	-2.3%	-3.1%
Anne Arundel															
Middle School	71.9%	21.3%	3.4%	1.2%	2.2%	76.4%	19.4%	1.9%	1.2%	1.2%	4.5%	-1.9%	-1.5%	0.0%	-1.0%
High School	50.2%	24.2%	5.4%	6.6%	13.5%	54.9%	24.7%	5.3%	5.2%	10.0%	4.7%	0.5%	-0.1%	-1.4%	-3.5%
Baltimore City															
Middle School	69.6%	21.9%	5.5%	1.7%	1.3%	71.8%	22.6%	2.3%	2.3%	1.0%	2.2%	0.7%	-3.2%	0.6%	-0.3%
High School	68.0%	19.2%	7.1%	3.1%	2.7%	69.6%	21.3%	4.3%	2.4%	2.4%	1.6%	2.1%	-2.8%	-0.7%	-0.3%
Baltimore County															
Middle School	75.0%	20.9%	1.4%	1.5%	1.2%	77.3%	19.9%	1.6%	0.6%	0.6%	2.3%	-1.0%	0.2%	-0.9%	-0.6%
High School	53.7%	25.0%	5.1%	4.0%	12.2%	59.1%	23.5%	4.7%	4.6%	8.1%	5.4%	-1.5%	-0.4%	0.6%	-4.1%
Calvert															
Middle School	71.3%	22.0%	3.2%	2.0%	1.5%	78.2%	17.5%	1.7%	1.8%	0.7%	6.9%	-4.5%	-1.5%	-0.2%	-0.8%
High School	49.9%	23.7%	6.6%	6.4%	13.4%	50.1%	24.0%	7.1%	5.8%	12.9%	0.2%	0.3%	0.5%	-0.6%	-0.5%
Caroline															
Middle School	73.9%	17.8%	2.1%	3.9%	2.4%	71.8%	20.5%	3.0%	3.3%	1.4%	-2.1%	2.7%	0.9%	-0.6%	-1.0%
High School	44.3%	23.7%	6.8%	7.0%	18.3%	50.4%	23.8%	6.3%	7.1%	12.4%	6.1%	0.1%	-0.5%	0.1%	-5.9%
Carroll															
Middle School	80.1%	16.6%	1.4%	0.7%	1.2%	84.2%	13.4%	1.3%	0.6%	0.5%	4.1%	-3.2%	-0.1%	-0.1%	-0.7%
High School	55.1%	21.7%	5.8%	5.3%	12.1%	56.6%	23.2%	4.7%	5.6%	9.9%	1.5%	1.5%	-1.1%	0.3%	-2.2%
Cecil															
Middle School	70.1%	21.0%	3.5%	3.0%	2.4%	72.1%	20.0%	2.8%	2.7%	2.4%	2.0%	-1.0%	-0.7%	-0.3%	0.0%
High School	49.5%	21.1%	6.4%	7.3%	15.7%	54.2%	21.9%	4.8%	5.8%	13.2%	4.7%	0.8%	-1.6%	-1.5%	-2.5%
Charles															
Middle School	73.3%	20.5%	3.6%	2.0%	0.7%	78.8%	17.5%	2.2%	0.7%	0.8%	5.5%	-3.0%	-1.4%	-1.3%	0.1%
High School	49.8%	24.2%	6.8%	6.2%	13.0%	57.2%	23.3%	5.2%	5.4%	8.9%	7.4%	-0.9%	-1.6%	-0.8%	-4.1%
Dorchester															
Middle School	67.8%	25.2%	4.0%	2.5%	0.4%	75.7%	18.8%	2.5%	2.7%	1.1%	7.9%	-6.4%	-1.5%	0.2%	0.7%
High School	53.3%	23.9%	7.4%	6.2%	9.2%	57.3%	22.0%	6.4%	5.7%	8.6%	4.0%	-1.9%	-1.0%	-0.5%	-0.6%
Frederick															
Middle School	75.2%	19.0%	2.2%	2.3%	1.2%	77.7%	18.8%	1.1%	2.0%	0.4%	2.5%	-0.2%	-1.1%	-0.3%	-0.8%
High School	46.9%	26.0%	6.8%	7.1%	13.2%	55.2%	25.0%	5.2%	5.3%	9.3%	8.3%	-1.0%	-1.6%	-1.8%	-3.9%
Garrett															
Middle School	71.2%	21.8%	3.1%	2.8%	1.2%	73.1%	17.3%	3.9%	2.8%	2.9%	1.9%	-4.5%	0.8%	0.0%	1.7%
High School	44.2%	25.3%	6.8%	6.7%	17.1%	52.3%	22.0%	5.5%	7.0%	13.2%	8.1%	-3.3%	-1.3%	0.3%	-3.9%
Harford															
Middle School	69.5%	22.8%	3.6%	2.5%	1.6%	74.4%	21.2%	1.9%	1.1%	1.4%	4.9%	-1.6%	-1.7%	-1.4%	-0.2%
High School	45.8%	24.8%	5.9%	7.7%	15.7%	58.4%	22.7%	4.7%	5.5%	8.6%	12.6%	-2.1%	-1.2%	-2.2%	-7.1%

Numbers in red represent a decrease from 2000 to 2002

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	2000					2002					Absolute Change: 2002-2000				
	PC	C	P	A	M	PC	C	P	A	M	PC	C	P	A	M
Howard															
Middle School	77.1%	19.9%	1.4%	0.9%	0.6%	82.2%	15.1%	1.7%	0.8%	0.2%	5.1%	-4.8%	0.3%	-0.1%	-0.4%
High School	54.9%	27.3%	5.1%	4.3%	8.4%	57.1%	26.8%	4.8%	4.4%	6.9%	2.2%	-0.5%	-0.3%	0.1%	-1.5%
Kent															
Middle School	71.6%	22.5%	2.8%	1.4%	1.7%	66.4%	22.6%	3.4%	5.0%	2.6%	-5.2%	0.1%	0.6%	3.6%	0.9%
High School	38.1%	30.1%	10.5%	9.1%	12.3%	45.8%	28.6%	7.4%	7.2%	11.0%	7.7%	-1.5%	-3.1%	-1.9%	-1.3%
Montgomery															
Middle School	80.3%	17.2%	1.5%	0.6%	0.4%	82.7%	15.1%	1.3%	0.6%	0.3%	2.4%	-2.1%	-0.2%	0.0%	-0.1%
High School	54.5%	27.8%	6.2%	4.6%	6.9%	60.6%	26.5%	5.0%	3.5%	4.5%	6.1%	-1.3%	-1.2%	-1.1%	-2.4%
Prince George's															
Middle School	75.1%	21.4%	2.3%	1.0%	0.2%	77.7%	19.6%	2.0%	0.4%	0.4%	2.6%	-1.8%	-0.3%	-0.6%	0.2%
High School	64.8%	22.3%	5.2%	3.4%	4.4%	64.8%	24.8%	4.1%	3.2%	3.1%	0.0%	2.5%	-1.1%	-0.2%	-1.3%
Queen Anne's															
Middle School	74.7%	18.6%	2.7%	2.7%	1.4%	77.7%	17.5%	3.1%	0.9%	0.7%	3.0%	-1.1%	0.4%	-1.8%	-0.7%
High School	46.9%	24.1%	8.5%	6.2%	14.3%	50.2%	24.0%	5.3%	6.5%	14.0%	3.3%	-0.1%	-3.2%	0.3%	-0.3%
Somerset															
Middle School	65.9%	20.2%	6.9%	4.4%	2.6%	66.4%	22.1%	3.9%	4.1%	3.5%	0.5%	1.9%	-3.0%	-0.3%	0.9%
High School	41.9%	23.2%	8.8%	8.2%	17.9%	50.1%	25.8%	9.3%	5.5%	9.3%	8.2%	2.6%	0.5%	-2.7%	-8.6%
St. Mary's															
Middle School	70.1%	24.0%	3.2%	1.3%	1.4%	75.0%	19.4%	2.3%	2.5%	0.8%	4.9%	-4.6%	-0.9%	1.2%	-0.6%
High School	51.5%	21.2%	5.9%	6.4%	15.0%	51.7%	25.2%	5.1%	6.1%	12.0%	0.2%	4.0%	-0.8%	-0.3%	-3.0%
Talbot															
Middle School	75.8%	18.1%	2.2%	2.0%	1.9%	74.3%	21.5%	1.7%	1.1%	1.5%	-1.5%	3.4%	-0.5%	-0.9%	-0.4%
High School	41.9%	25.8%	6.7%	7.7%	17.9%	47.2%	28.3%	7.1%	5.6%	11.9%	5.3%	2.5%	0.4%	-2.1%	-6.0%
Washington															
Middle School	68.2%	22.6%	3.8%	3.8%	1.5%	70.6%	22.1%	3.1%	2.3%	1.9%	2.4%	-0.5%	-0.7%	-1.5%	0.4%
High School	48.0%	21.2%	7.1%	6.9%	16.8%	52.7%	23.4%	7.0%	5.6%	11.4%	4.7%	2.2%	-0.1%	-1.3%	-5.4%
Wicomico															
Middle School	72.3%	19.7%	2.8%	3.1%	2.0%	77.9%	14.1%	3.4%	2.2%	2.3%	5.6%	-5.6%	0.6%	-0.9%	0.3%
High School	50.5%	20.6%	5.8%	8.0%	15.2%	56.0%	21.5%	6.0%	5.4%	11.1%	5.5%	0.9%	0.2%	-2.6%	-4.1%
Worcester															
Middle School	75.7%	18.4%	2.6%	2.8%	0.4%	73.3%	21.7%	2.4%	1.7%	0.9%	-2.4%	3.3%	-0.2%	-1.1%	0.5%
High School	52.6%	22.0%	6.5%	4.9%	14.1%	56.1%	23.0%	6.0%	5.1%	9.8%	3.5%	1.0%	-0.5%	0.2%	-4.3%
STATEWIDE															
Middle School	**74.5%**	**20.4%**	**2.6%**	**1.5%**	**1.1%**	**77.6%**	**18.6%**	**1.9%**	**1.1%**	**0.8%**	3.1%	-1.8%	-0.7%	-0.4%	-0.3%
High School	**55.2%**	**24.4%**	**5.9%**	**5.0%**	**9.5%**	**59.5%**	**24.4%**	**5.0%**	**4.3%**	**6.8%**	4.3%	0.0%	-0.9%	-0.7%	-2.7%

Numbers in red represent a decrease from 2000 to 2002

As in the table 3 which provided the statewide averages, the change from 2000 to 2002 in the percentages of adolescents within one stage represents the **absolute** change from 2000 to 2002, merely subtracting the percentage of one year from the other.

Below are some easy instructions for how to interpret Table 4:

STEP 1:   Look at your county's Stages of Smoking Initiation profile.   How does your county's profile differ for Middle School and High School?

STEP 2:   Look at the changes in your county's Stages of Smoking Initiation profile from 2000 to 2002 (i.e., Absolute Change column) for both Middle School and High School.

STEP 3:   Compare your county's Stages of Smoking Initiation profile to the statewide profile for Maryland.

STEP 4:   **Now, Interpret Your County's Profiles:**

- Ideally, you want to see the majority of your adolescents, regardless of school status, in the earlier Stages of Smoking Initiation, meaning that your adolescents are not progressing through the Stages toward regular smoking. This would translate into a positive absolute change in the Precontemplation Stage and a negative absolute change in the Action and Maintenance Stages of Smoking Initiation.

- If your county has had a decrease in the percentages of students in the Action and Maintenance Stages of Smoking Initiation, look back at your prevention efforts because these may have contributed to decreases in regular cigarette smoking among adolescents in your county.

- If your county has had an increase in the percentages of students in the Action and Maintenance Stages of Smoking Initiation, more prevention efforts may be needed because this suggests an increase in regular cigarette smoking among adolescents in your county.

- If you have different patterns over time, for Middle and High School, you may have more effective prevention efforts at one level but not at the other. For example, your Stages of Smoking Initiation profile in High School is changing in the right direction, but your Middle School profile may show increases in the later Stages.   This means you may want to enhance prevention efforts among Middle School students while you continue your High School prevention efforts.

- In addition to your county efforts, you should also look at statewide efforts to determine how they may have influenced your Stage profiles.

Relative Change in the Stages of Smoking Initiation was also calculated for the state and for each county (see Appendix A). This change was calculated as the Absolute Change for a stage divided by the percent of adolescents within that stage in 2000. *This value provides you with the amount of change in your county's Stage of Smoking Initiation profile calculated using the amount of change possible within a given Stage in your county.*

Summary of Overall County Profiles

- Inspection of the Stages of Smoking Initiation profile among individual counties shows that more than half of Maryland counties evidenced a reduction in the percentage of adolescents in Maintenance (i.e., long-term regular smokers) among **both** Middle School and High School students.

- All of the remaining counties also showed a decrease in the percentage of High School students in Maintenance, while the percentage of Middle School students in this stage remained the same or increased.

Q: What does this mean for the prevention of smoking initiation among adolescents in the state of Maryland?

A: Keeping in mind the statewide and individual county differences in the Stages of Smoking Initiation profile as well as the different patterns in the Stages exhibited by Middle School and High School students (see Tables 3 and 4), we will provide information on how the Stages of Smoking Initiation can be used to tailor your smoking prevention efforts.

Stages of Smoking Initiation and Prevention Strategies

A brief review of some important smoking prevention strategies for adolescents is presented below. Because CDC approved programs are commonly used by county providers, we have highlighted which strategies are addressed in each approved program and related them to the Stages of Smoking Initiation (see Tables 5 and 6). For those of you who are using other prevention programs, we have also presented key prevention strategies that may be useful for adolescents in each Stage of Smoking Initiation (see Table 7). Depending on what you county profile looks like, you will use different prevention strategies and these tables are designed to help you do that.

Discussion of Elements found in School-based Prevention Interventions

Cigarette smoking prevention efforts among adolescents have typically focused on school-based approaches. Existing school-based prevention programs have generally focused on one or more of the following elements: skills development; knowledge, attitudes, and beliefs; social influence; advertising; feedback, commitment, and activism; and tobacco control.

Skills Development

Skills development is a general approach that focuses on basic personal and interpersonal skills. The development of personal skills within prevention interventions typically includes time devoted to self-confidence, decision-making skills, coping with anxiety, stress management, and self-control. In addition, interpersonal skills include conversation skills, conflict management, and strategies aimed at reducing peer pressure (e.g., tobacco refusal skills). Interventions use techniques such as role-plays, didactic teaching, and interactive participation.

Knowledge, Attitudes, and Beliefs

Interventions including a knowledge, attitudes, and beliefs component attempt to address existing ideas about smoking and correct any smoking-related misperceptions. Programs that include this type of component commonly use didactic teaching and group discussion in order to convey accurate knowledge and counter positive tobacco attitudes and beliefs.

Social Influence

Social influences are believed to play a large role in smoking initiation among adolescents. Peers, parents, and the media serve as models for behavior. Adolescents who are exposed to smoking behavior by these models are more likely to engage in cigarette smoking. Providing adolescents with education about the potential influence from these sources has been shown to reduce the effect of social influence and thus, reduce smoking initiation.

Advertising

Exposure to tobacco-related counter-advertising is a common, cost-effective method of intervening at a community level. In contrast to the tobacco companies' unrealistic portrayal of cigarette smoking, these advertisements attempt to personalize the negative consequences of smoking while providing accurate knowledge about the health effects of smoking. Counter-advertising interventions are typically found in local and national media campaigns (e.g., television commercials).

Feedback, Commitment, and Activism

All of three of these intervention components involve the adolescent in a more interactive role. Personalized feedback attempts to tailor intervention efforts to the adolescent's actual smoking behavior. Making commitments not to smoke and writing anti-tobacco letters are methods that empower the adolescent. These methods encourage the adolescent to make a firm stand against cigarette smoking by having them make a vocal and written commitment not to smoke. For these types of interventions, adolescents may sign contracts stating their intentions not to smoke and/or write letters to tobacco companies or movie producers about their influence on youth tobacco use.

<u>Tobacco Control</u>

Tobacco control efforts are focused on more of a global level in order to reduce adolescent access and exposure to tobacco. Changes in social policy, such as enforcement of sales to minors and creating smoke-free environments, represent effective tobacco control efforts.

CDC-Approved Prevention Curricula

The literature review provided above highlights general strategies used for preventing smoking among adolescents. These strategies are often used in the creation of smoking prevention programs and can be found in many existing programs.

The CDC has commissioned a task force to evaluate smoking prevention programs among adolescents. The CDC then approves only those curricula that are shown to be effective. Currently, the CDC has approved two Prevention Curricula "as programs that work": Life Skills Training (LST) and Towards No Tobacco (TNT).[7] The LST and TNT programs are two examples of prevention-based curricula used in today's schools. Because these CDC approved programs are commonly used by county providers, we have created tables that incorporate the Stages of Smoking Initiation with these existing prevention programs (see Tables 5 and 6).

For each program table, prevention strategies addressed within the program are highlighted and suggestions are made indicating specific strategies within the program that may have more of an effect on some Stages rather than others. As a result, these tables show you how to tailor each CDC-approved program to best fit your county's Stages of Smoking Initiation profile. Also included in Tables 5 and 6 are the Processes of Change and Markers of Change that may be influenced by each intervention strategy. Finally, barriers to implementation of each intervention strategy are identified for program planning purposes. By providing this information, these tables suggest approaches for altering prevention interventions based on Stage of Smoking Initiation. Interventions should target either key components or barriers to the key component in order to prevent movement through the Stages of Smoking Initiation toward cigarette smoking behavior.

Table 5. Life Skills Training (LST; CDC-approved Prevention Curricula)

Life Skills Training (LST)	Individual Intervention Components	Processes of Behavioral Change		Markers	Barriers	Stage
		Experiential Processes	Behavioral Processes			
Personal Skills	Self-Image	Self-Reevaluation		Protective Self-Efficacy	Contextual Factors	PC, C, P*
	Coping with Anxiety		Conditioning		Multiple Life Stressors	A, M*
Interpersonal Skills	Communication Skills	Self-Reevaluation	Helping Relationships		Individual Differences in Cognitive Functioning	PC, C, P*
	Relationship Development		Helping Relationships			PC, C, P*
Tobacco-Related Information and Skills	Myths & Misconceptions (e.g., prevalence rates, social acceptability of smoking)	Environmental Reevaluation			Differences in Prevalence Rates by Locale, Peer Group's Views on Smoking	C, P*
	Physical Consequences of Cigarette Smoking	Self-Reevaluation, Environmental Reevaluation		Decisional-Balance		PC, C, P
	Counter-Advertising - Tobacco Companies Manipulate through Advertising	Consciousness-Raising		Protective Self-Efficacy	Psychological Reactance	A, M*
	Drug Refusal Skills (e.g., training , role play)		Conditioning, Self-liberation	Self-Efficacy	Impulsivity	A, M

*Note: Although this component is important for these stages, the content of that component is also relevant for students in any stage.

Table 6. Project Towards No Tobacco Use (TNT; CDC-Approved Prevention Curricula)

Project Towards No Tobacco (TNT)	**Individual Intervention Components**	**Processes of Behavioral Change**		**Markers**	**Barriers**	**Stage**
		Experiential Processes	**Behavioral Processes**			
Interpersonal Skills	Communication Skills	Self-Reevaluation	Helping Relationships		Individual Differences in Cognitive Functioning	PC, C, P*
	Cigarette Refusal Skills		Conditioning, Self-Liberation	Self-Efficacy	Impulsivity	C, P
Tobacco-Related Information and Skills	Short-Term Effects of Cigarette Smoking	Consciousness-Raising		Decisional Balance - Cons	Engagement, Psychological Reactance	C, P, A
	Long-Term Effects of Cigarette Smoking	Consciousness-Raising		Decisional Balance - Cons	Engagement, Psychological Reactance	A, M
Information on Social Influence	Smoking by Peers and Adults (real or perceived)	Self-Reevaluation, Environmental Reevaluation		Decisional-Balance		PC, C, P
	Media and Tobacco Industry Advertising as Misleading	Consciousness-Raising		Protective Self-Efficacy	Psychological Reactance	A, M*

*Note: Although this component is important for these stages, the content of that component is also relevant for students in any stage.

Key Strategies for the Stages of Smoking Initiation

For those of you who are using prevention programs other than CDC-approved programs, we have compiled a table of key prevention strategies that are important to target for adolescents in each of the Stages of Smoking Initiation (see Table 7). For example, prevention interventions directed toward adolescents in the earlier Stages of Smoking Initiation (i.e., Precontemplation, Contemplation) should focus on bolstering the positive effects of existing protective factors while programs aimed at adolescents in the later Stages (i.e., Preparation, Action, Maintenance) should address risk factors associated with smoking.

Table 7. Key Strategies for the Stages of Smoking Initiation	
Stage of Smoking Initiation	**Key Strategies**
Precontemplation	General Personal Skills, General Interpersonal Skills, Tobacco Control Efforts, Portrayal of Negative Consequences of Smoking
Contemplation	General Personal Skills, General Interpersonal Skills, Positive Attitudes and Beliefs about Smoking, Positive Expectancies about Smoking, Knowledge about the Effects of Smoking, Social Influence, Normative Perceptions of Smoking Prevalence, Portrayal of the Negative Consequences of Smoking, Individual Intentions Not to Smoke
Preparation	Decision-Making, Refusal Assertion Skills, Positive Attitudes and Beliefs about Smoking, Positive Expectancies about Smoking, Knowledge about the Effects of Smoking, Social Influence, Normative Perceptions of Smoking Prevalence, Portrayal of the Negative Consequences of Smoking, Individual Intentions Not to Smoke
Action	Personal Skills of Coping with Social Anxiety and Stress Management, Interpersonal Skills of Smoking Specific Refusal Skills, Knowledge about the Effects of Smoking, Tobacco Control Efforts, Counter-advertising - Tobacco Companies Manipulating through Advertising
Maintenance	Personal Skills of Coping with Social Anxiety and Stress Management, Interpersonal Skills of Smoking Specific Refusal Skills, Tobacco Control Efforts, Counter-Advertising - Tobacco Companies Manipulating through Advertising, Personalized Feedback Regarding the Negative Consequences and Potential Dangers Associated with Smoking

Tables 5, 6, and 7 will help you to make wise decisions regarding prevention efforts in your county based on your county's Stages of Smoking Initiation profile. For a more generic approach to intervention strategies based on the Processes of Change, see the *Key Intervention Components* table in Appendix B.

Section IX. Recommendations

- ☑ **Targets of Prevention**

  - ⇒ **Where are your Middle School and High School students in the Stages of Smoking Initiation**

  - ⇒ **Who or What group(s) do you want/need to target?**

- ☑ **Resources and Strategies**

  - ⇒ **What Support do you need in order to deliver the intervention?**

  - ⇒ **What Stage-specific components will you use?**

- ☑ **Plan for Success**

  - ⇒ **Use Focus Groups, Pilot Programs**

  - ⇒ **Know your Collaborators – What are your Stakeholders feelings?**

  - ⇒ **Re-Evaluate your Plan as needed - Do you need to leverage other resources?**

- ☑ **Evaluation**

  - ⇒ **Who is actually receiving the Intervention?**

  - ⇒ **Carefully Monitor the effect of your programs**

Interpreting the Relative Change Tables for County-wide Profiles: Change over time

In addition to Absolute Change over time, analyses were also conducted to examine Relative Changes in the Stages of Smoking Initiation profiles based on county of residence and school status (i.e., Middle School and High School). This change was calculated as the Absolute Change for a stage divided by the percent of adolescents within that stage in 2000. *This value provides you with the amount of change in your county's Stage of Smoking Initiation profile calculated using the amount of change possible within a given Stage in your county.*

Instructions for interpretation of the Relative Change Table are as follows:

STEP 1:   Examine the statewide Relative Change distribution of the Stages of Smoking Initiation located at the bottom of the table. Positive change scores indicate an increase in the percentage of adolescents in a stage from 2000 to 2002, while negative change scores represent a decrease in the percentage of adolescents in a stage from 2000 to 2002. For example, among Middle School students statewide, there was an increase in the percentage of students in Precontemplation and a reduction in the percentage of students in Contemplation, Preparation, Action, and Maintenance.

STEP 2:   Identify your county and note the Relative Change values. Compare your county's Stages of Smoking Initiation profile to the statewide profile. Note whether your county's profiles are similar to the statewide profile, whether your county exhibited decreases in the later stages (e.g., Preparation, Action, Maintenance) suggesting a decrease in the prevalence of smoking, and whether shifts in the Stages of Smoking Initiation were consistent across Middle School and High School.

Relative Change in Stages of Smoking Initiation by County of Residence and School Status

	Wave 1 (2000)					Wave (2002)					Relative Change				
	PC	C	P	A	M	PC	C	P	A	M	PC	C	P	A	M
Allegany															
MS	70.5%	22.2%	3.7%	1.8%	1.8%	76.3%	17.8%	2.5%	1.5%	1.9%	8.2%	-19.8%	-32.4%	-16.7%	5.6%
HS	44.4%	21.7%	5.8%	8.6%	19.6%	52.5%	18.9%	5.8%	6.3%	16.5%	18.2%	-12.9%	0.0%	-26.7%	-15.8%
Anne Arundel															
MS	71.9%	21.3%	3.4%	1.2%	2.2%	76.4%	19.4%	1.9%	1.2%	1.2%	6.3%	-8.9%	-44.1%	0.0%	-45.5%
HS	50.2%	24.2%	5.4%	6.6%	13.5%	54.9%	24.7%	5.3%	5.2%	10.0%	9.4%	2.1%	-1.9%	-21.2%	-25.9%
Baltimore City															
MS	69.6%	21.9%	5.5%	1.7%	1.3%	71.8%	22.6%	2.3%	2.3%	1.0%	3.2%	3.2%	-58.2%	35.3%	-23.1%
HS	68.0%	19.2%	7.1%	3.1%	2.7%	69.6%	21.3%	4.3%	2.4%	2.4%	2.4%	10.9%	-39.4%	-22.6%	-11.1%
Baltimore Co															
MS	75.0%	20.9%	1.4%	1.5%	1.2%	77.3%	19.9%	1.6%	0.6%	0.6%	3.1%	-4.8%	14.3%	-60.0%	-50.0%
HS	53.7%	25.0%	5.1%	4.0%	12.2%	59.1%	23.5%	4.7%	4.6%	8.1%	10.1%	-6.0%	-7.8%	15.0%	-33.6%
Calvert															
MS	71.3%	22.0%	3.2%	2.0%	1.5%	78.2%	17.5%	1.7%	1.8%	0.7%	9.7%	-20.5%	-46.9%	-10.0%	-53.3%
HS	49.9%	23.7%	6.6%	6.4%	13.4%	50.1%	24.0%	7.1%	5.8%	12.9%	0.4%	1.3%	7.6%	-9.4%	-3.7%
Caroline															
MS	73.9%	17.8%	2.1%	3.9%	2.4%	71.8%	20.5%	3.0%	3.3%	1.4%	-2.8%	15.2%	42.9%	-15.4%	-41.7%
HS	44.3%	23.7%	6.8%	7.0%	18.3%	50.4%	23.8%	6.3%	7.1%	12.4%	13.8%	0.4%	-7.4%	1.4%	-32.2%
Carroll															
MS	80.1%	16.6%	1.4%	0.7%	1.2%	84.2%	13.4%	1.3%	0.6%	0.5%	5.1%	-19.3%	-7.1%	-14.3%	-58.3%
HS	55.1%	21.7%	5.8%	5.3%	12.1%	56.6%	23.2%	4.7%	5.6%	9.9%	2.7%	6.9%	-19.0%	5.7%	-18.2%
Cecil															
MS	70.1%	21.0%	3.5%	3.0%	2.4%	72.1%	20.0%	2.8%	2.7%	2.4%	2.9%	-4.8%	-20.0%	-10.0%	0.0%
HS	49.5%	21.1%	6.4%	7.3%	15.7%	54.2%	21.9%	4.8%	5.8%	13.2%	9.5%	3.8%	-25.0%	-20.5%	-15.9%
Charles															
MS	73.3%	20.5%	3.6%	2.0%	0.7%	78.8%	17.5%	2.2%	0.7%	0.8%	7.5%	-14.6%	-38.9%	-65.0%	14.3%
HS	49.8%	24.2%	6.8%	6.2%	13.0%	57.2%	23.3%	5.2%	5.4%	8.9%	14.9%	-3.7%	-23.5%	-12.9%	-31.5%
Dorchester															
MS	67.8%	25.2%	4.0%	2.5%	0.4%	75.7%	18.8%	2.5%	2.7%	1.1%	11.7%	-25.4%	-37.5%	8.0%	175.0%
HS	53.3%	23.9%	7.4%	6.2%	9.2%	57.3%	22.0%	6.4%	5.7%	8.6%	7.5%	-7.9%	-13.5%	-8.1%	-6.5%
Frederick															
MS	75.2%	19.0%	2.2%	2.3%	1.2%	77.7%	18.8%	1.1%	2.0%	0.4%	3.3%	-1.1%	-50.0%	-13.0%	-66.7%
HS	46.9%	26.0%	6.8%	7.1%	13.2%	55.2%	25.0%	5.2%	5.3%	9.3%	17.7%	-3.8%	-23.5%	-25.4%	-29.5%
Garrett															
MS	71.2%	21.8%	3.1%	2.8%	1.2%	73.1%	17.3%	3.9%	2.8%	2.9%	2.7%	-20.6%	25.8%	0.0%	141.7%
HS	44.2%	25.3%	6.8%	6.7%	17.1%	52.3%	22.0%	5.5%	7.0%	13.2%	18.3%	-13.0%	-19.1%	4.5%	-22.8%

Numbers in red represent decrease from 2000 to 2002

Relative Change in Stages of Smoking Initiation by County of Residence and School Status (cont'd)

	Wave 1 (2000)					Wave (2002)					Relative Change				
	PC	C	P	A	M	PC	C	P	A	M	PC	C	P	A	M
Harford															
MS	69.5%	22.8%	3.6%	2.5%	1.6%	74.4%	21.2%	1.9%	1.1%	1.4%	7.1%	-7.0%	-47.2%	-56.0%	-12.5%
HS	45.8%	24.8%	5.9%	7.7%	15.7%	58.4%	22.7%	4.7%	5.5%	8.6%	27.5%	-8.5%	-20.3%	-28.6%	-45.2%
Howard															
MS	77.1%	19.9%	1.4%	0.9%	0.6%	82.2%	15.1%	1.7%	0.8%	0.2%	6.6%	-24.1%	21.4%	-11.1%	-66.7%
HS	54.9%	27.3%	5.1%	4.3%	8.4%	57.1%	26.8%	4.8%	4.4%	6.9%	4.0%	-1.8%	-5.9%	2.3%	-17.9%
Kent															
MS	71.6%	22.5%	2.8%	1.4%	1.7%	66.4%	22.6%	3.4%	5.0%	2.6%	-7.3%	0.4%	21.4%	257.1%	52.9%
HS	38.1%	30.1%	10.5%	9.1%	12.3%	45.8%	28.6%	7.4%	7.2%	11.0%	20.2%	-5.0%	-29.5%	-20.9%	-10.6%
Montgomery															
MS	80.3%	17.2%	1.5%	0.6%	0.4%	82.7%	15.1%	1.3%	0.6%	0.3%	3.0%	-12.2%	-13.3%	0.0%	-25.0%
HS	54.5%	27.8%	6.2%	4.6%	6.9%	60.6%	26.5%	5.0%	3.5%	4.5%	11.2%	-4.7%	-19.4%	-23.9%	-34.8%
Prince George's															
MS	75.1%	21.4%	2.3%	1.0%	0.2%	77.7%	19.6%	2.0%	0.4%	0.4%	3.5%	-8.4%	-13.0%	-60.0%	100.0%
HS	64.8%	22.3%	5.2%	3.4%	4.4%	64.8%	24.8%	4.1%	3.2%	3.1%	0.0%	11.2%	-21.2%	-5.9%	-29.5%
Queen Anne's															
MS	74.7%	18.6%	2.7%	2.7%	1.4%	77.7%	17.5%	3.1%	0.9%	0.7%	4.0%	-5.9%	14.8%	-66.7%	-50.0%
HS	46.9%	24.1%	8.5%	6.2%	14.3%	50.2%	24.0%	5.3%	6.5%	14.0%	7.0%	-0.4%	-37.6%	4.8%	-2.1%
Somerset															
MS	65.9%	20.2%	6.9%	4.4%	2.6%	66.4%	22.1%	3.9%	4.1%	3.5%	0.8%	9.4%	-43.5%	-6.8%	34.6%
HS	41.9%	23.2%	8.8%	8.2%	17.9%	50.1%	25.8%	9.3%	5.5%	9.3%	19.6%	11.2%	5.7%	-32.9%	-48.0%
St. Mary's															
MS	70.1%	24.0%	3.2%	1.3%	1.4%	75.0%	19.4%	2.3%	2.5%	0.8%	7.0%	-19.2%	-28.1%	92.3%	-42.9%
HS	51.5%	21.2%	5.9%	6.4%	15.0%	51.7%	25.2%	5.1%	6.1%	12.0%	0.4%	18.9%	-13.6%	-4.7%	-20.0%
Talbot															
MS	75.8%	18.1%	2.2%	2.0%	1.9%	74.3%	21.5%	1.7%	1.1%	1.5%	-2.0%	18.8%	-22.7%	-45.0%	-21.1%
HS	41.9%	25.8%	6.7%	7.7%	17.9%	47.2%	28.3%	7.1%	5.6%	11.9%	12.6%	9.7%	6.0%	-27.3%	-33.5%
Washington															
MS	68.2%	22.6%	3.8%	3.8%	1.5%	70.6%	22.1%	3.1%	2.3%	1.9%	3.5%	-2.2%	-18.4%	-39.5%	26.7%
HS	48.0%	21.2%	7.1%	6.9%	16.8%	52.7%	23.4%	7.0%	5.6%	11.4%	9.8%	10.4%	-1.4%	-18.8%	-32.1%
Wicomico															
MS	72.3%	19.7%	2.8%	3.1%	2.0%	77.9%	14.1%	3.4%	2.2%	2.3%	7.7%	-28.4%	21.4%	-29.0%	15.0%
HS	50.5%	20.6%	5.8%	8.0%	15.2%	56.0%	21.5%	6.0%	5.4%	11.1%	10.9%	4.4%	3.4%	-32.5%	-27.0%
Worcester															
MS	75.7%	18.4%	2.6%	2.8%	0.4%	73.3%	21.7%	2.4%	1.7%	0.9%	-3.2%	17.9%	-7.7%	-39.3%	125.0%
HS	52.6%	22.0%	6.5%	4.9%	14.1%	56.1%	23.0%	6.0%	5.1%	9.8%	6.7%	4.5%	-7.7%	4.1%	-30.5%
STATEWIDE															
MS	**74.5%**	**20.4%**	**2.6%**	**1.5%**	**1.1%**	**77.6%**	**18.6%**	**1.9%**	**1.1%**	**0.8%**	**4.2%**	**-8.8%**	**-26.9%**	**-26.7%**	**-27.3%**
HS	**55.2%**	**24.4%**	**5.9%**	**5.0%**	**9.5%**	**59.5%**	**24.4%**	**5.0%**	**4.3%**	**6.8%**	**7.8%**	**0.0%**	**-15.3%**	**-14.0%**	**-28.4%**

Numbers in red represent decrease from 2000 to 2002

Appendix B

Overview of Prevention Intervention Matrix: Key Intervention Components

In a review of the literature presented previously, we were able to identify main domains used in smoking interventions. Integration of these intervention domains with Transtheoretical Model concepts and other factors can aid in the tailoring of prevention interventions for adolescents based on their Stage of Smoking Initiation. This appendix represents the integration of information about existing smoking prevention programs with theory from the Transtheoretical Model and is provided below in table format.

The following Prevention Intervention Table lists key intervention components with corresponding intervention strategies and suggests the Stage of Smoking Initiation that is best influenced by that strategy. Also included in this table are the Processes of Change and Markers of Change that may be influenced by each intervention strategy. Based on a review of the literature, the intervention component being targeted is also identified as either a risk or protective factor. Finally, barriers to implementation of each intervention strategy are identified for program planning purposes. By providing this information, this table suggests approaches for altering prevention interventions based on Stage of Smoking Initiation. Interventions should target either key components or barriers to the key component in order to prevent movement through the Stages of Smoking Initiation toward cigarette smoking behavior.

How can I interpret this Prevention Intervention Table:

> One interpretation of this table could involve the role of social influence in the process of smoking initiation. For example, students may have models of smoking behavior in their environment, such as peers who smoke. Previous findings suggest that students in the Contemplation and Preparation Stages of Smoking Initiation seem to be most susceptible to the influence of peer smoking. In addition, adolescents who are prone to negative self-evaluation may be more vulnerable to the role of social influence. Based on this information, intervention strategies that target peer influence should focus on students within the Contemplation and Preparation Stages of Smoking Initiation and should engage the experiential processes of self-reevaluation and environmental re-evaluation.

Prevention Intervention Table: Key Intervention Components

Key Components	Individual Intervention Strategies	Experiential Processes	Behavioral Processes	Markers	Risk or Protective?	Barriers	Stage
Personal Skills	Self Confidence	Self-Reevaluation		Protective Self-Efficacy	P	Contextual Factors	PC, C, P*
	Decision-Making		Self-Liberation	Decisional Balance, Confidence	P	Impulsivity	P*
	Coping with Social Anxiety		Conditioning		R	Multiple Life Stressors	A, M*
	Stress Management		Conditioning		R	Multiple Life Stressors	A, M*
	Self-Control			Self-Efficacy, Temptation		Impulsivity	Generic - All Smoking Specific - P, A
Interpersonal Skills	Conversation Skills (e.g., listening skills)	Self-Reevaluation	Helping Relationships		P	Individual Differences in Cognitive Functioning	PC, C, P*
	Conflict Management	Environmental Reevaluation, Emotional Arousal		Protective Self-Efficacy	R	Social Development	PC, C, P*
	Refusal Assertion Skills (e.g., training, role play)		Conditioning, Self-Liberation	Protective Self-Efficacy	P	Impulsivity	Generic - PC, C, P Smoking Specific - A, M
Attitudes & Beliefs about Smoking	Counter Existing Positive Attutitudes and Beliefs about Smoking	Consciousness Raising, Self-Reevaluation		Decisional Balance - Cons	R	Smoking Models in Environment	C, P
Expectencies about Smoking	Counter Existing Positive Attutitudes and Beliefs about Smoking	Consciousness Raising, Self-Reevaluation		Decisional Balance - Cons	R	Smoking Models in Environment	C, P

*Note: Although this component is important for these stages, the content of that component is also relevant for students in any stage.

Prevention Intervention Table: Key Intervention Components (cont'd)

Key Components	Individual Intervention Strategies	Experiential Processes	Behavioral Processes	Markers	Risk or Protective?	Barriers	Stage
Knowledge	Physical Consequences of Cigarette Smoking - Short Term	Consciousness-Raising		Decisional Balance - Cons	P	Engagement, Psychological Reactance	C, P, A
	Physical Consequences of Cigarette Smoking - Long Term	Consciousness-Raising		Decisional Balance - Cons	P	Engagement, Psychological Reactance	C, P
	Addictive Properties of Nicotine	Consciousness-Raising		Decisional Balance - Cons	P	May Not be Develomentally Appropriate for Younger Students	C, P
	Myths & Misconceptions about Smoking	Consciousness-Raising		Decisional Balance - Cons	P	Truth Contrary to Personal Experience	C, P
Social Influence	Peer Influences	Self-Reevaluation, Environmental Reevaluation			R	Differences in Prevalence Rates by Locale	C, P
	Adult/Family Influences	Self-Reevaluation			R	Parental Smoking	C, P
	Media Influences (e.g., smoking in movies or on television)	Self-Reevaluation, Environmental Reevaluation			R		C, P
	Normative Perceptions: Prevalence Estimates & Adjustment of Social Normative Perceptions	Environmental Reevaluation			R	Differences in Prevalence Rates by Locale	C, P*
	Normative Perceptions: Estimates of Acceptability of Smoking	Environmental Reevaluation			R	Peer Group's View on Smoking	C, P*

*Note: Although this component is important for these stages, the content of that component is also relevant for students in any stage.

Prevention Intervention Table: Key Intervention Components (cont'd)

Key Components	Individual Intervention Strategies	Experiential Processes	Behavioral Processes	Markers	Risk or Protective?	Barriers	Stage
Tobacco Control Efforts	Reduction in Tobacco Exposure / Access - Home		Stimulus Control	Temptation	P - PC; R - A, M	Parental Smoking	PC, A, M
	Reduction in Tobacco Access - Stores; Strict Enforcement of No Sales to Minors	Social Liberation		Temptation	P - PC; R - A, M	Single Cigarettes Sold	PC, A, M
	Reduction in Tobacco Access - Other Contexts; Removal of Vending Machines	Social Liberation		Temptation	P	Lack of Social Policy	PC, A, M
	Increased Tobacco Taxes	Social Liberation			P	Lack of Social Policy	PC, A, M
	Smoke-Free Environments	Social Liberation			P	Lack of Social Policy	PC, C, P*
Tobacco-Related Advertisement Influences	Counter-Advertising - Health Effects of Smoking	Consciousness-Raising		Decisional Balance - Cons	P/R	Psychological Reactance	P, A, M*
	Graphic, Dramatic, Emotional Portrayal of the Negative Consequences of Smoking	Emotional Arousal		Decisional Balance - Cons	P/R	Psychological Reactance	PC, C, P
	Counter-Advertising - Tobacco Companies Manipulate through Advertising	Consciousness-Raising		Protective Self-Efficacy	P/R	Psychological Reactance	A, M*
Individual Intentions	Making a Commitment Not to Use Tobacco		Self-Liberation, Reinforcement Management	Self-Efficacy	P	Contextual Factors (e.g., multiple stressors), Individual Differences (e.g., investment)	C, P
Personalized Feedback - Smoking Specific	Negative Consequences & Potential Dangers	Consciousness-Raising, Environmental Reevaluation		Decisional Balance, Self-Efficacy	P	Psychological Reactance	M

*Note: Although this component is important for these stages, the content of that component is also relevant for students in any stage.

Prevention Intervention Table: Key Intervention Components (cont'd)

Key Components	Individual Intervention Strategies	Experiential Processes	Behavioral Processes	Markers	Risk or Protective?	Barriers	Stage
Anti-Tobacco Activism	Assertive Communication Skills (e.g., positive methods for encouraging others to quit smoking)	Emotional Arousal		Decisional Balance - Cons	P	Individual Differences (e.g., lack of self-confidence), Interpersonal Skills (e.g., ability to articulate	PC, C, P
	Writing Letters on Tobacco Use among Youth (e.g., to tobacco companies) or Protesting Tobacco Advertising (e.g., to magazine editors and movie producers)	Emotional Arousal		Decisional Balance - Cons	P		PC, C, P

*Note: Although this component is important for these stages, the content of that component is also relevant for students in any stage.

Additional Links

Tobacco Education and Prevention Program   http://www.tepp.org

Tobacco Information and Tobacco Source (TIPS)   http://www.cdc.gov/tobacco

Smoking Stops Here   http://www.smokingstopshere.com

American Lung Association   http://www.lungusa.org

American Cancer Society   http://www.cancer.org

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