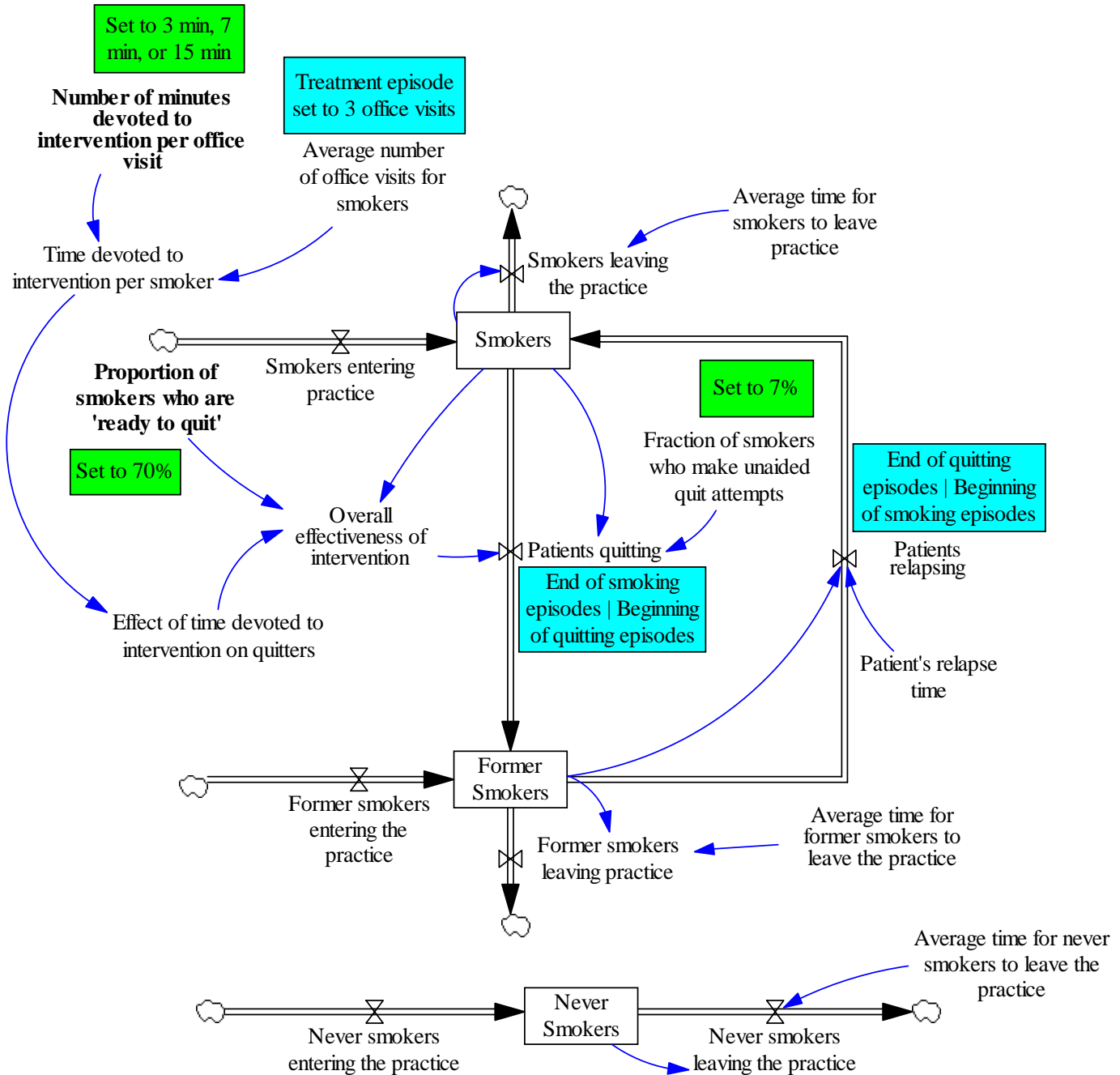


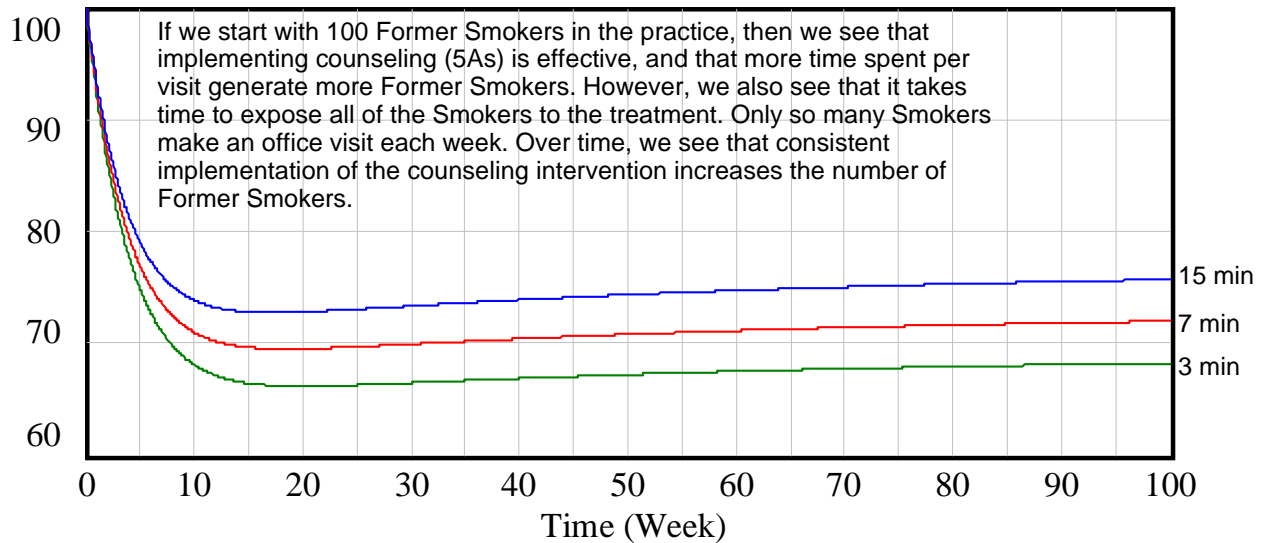
# Sample Partial Model: Primary Care Practice Dynamics

## Stock and Flow Diagram:



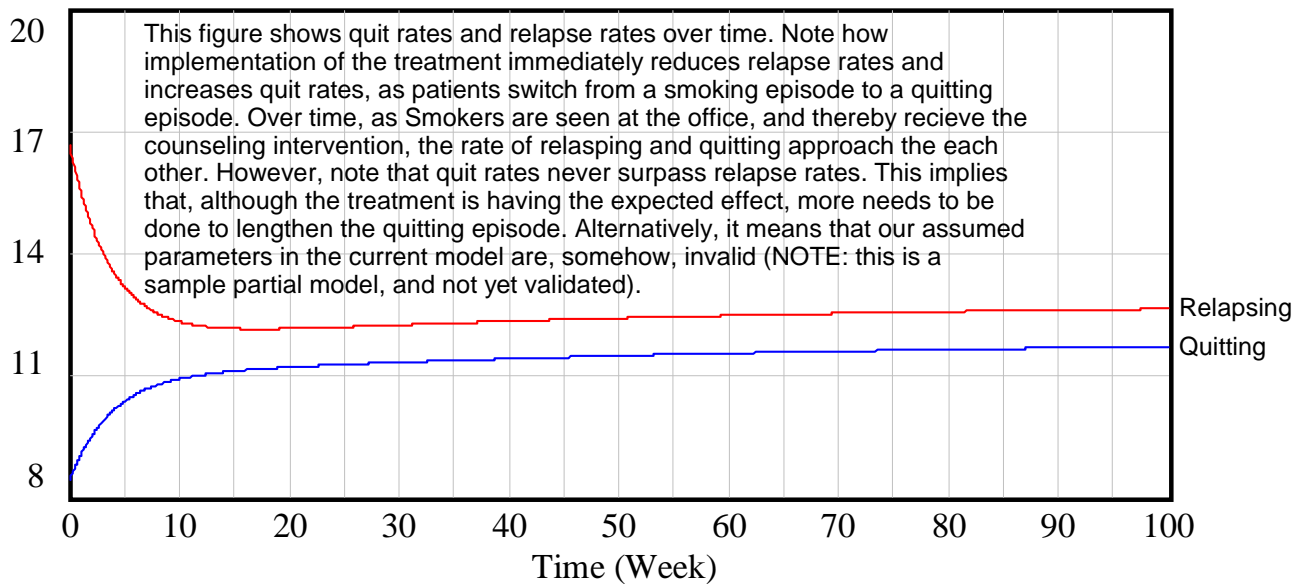
**Sample Simulation Output:**

### Former Smokers



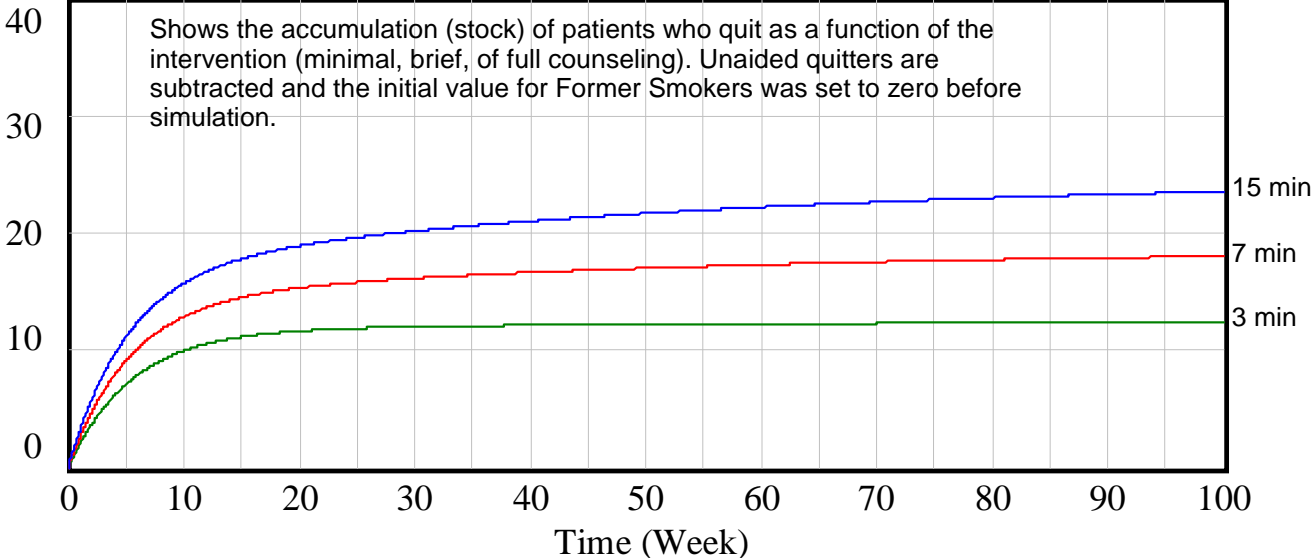
Former Smokers : 15 min visit ————— People  
 Former Smokers : 7 min visit ————— People  
 Former Smokers : 3 min visit ————— People

### Quitting and Relapsing



Patients quitting : 15 min visit ————— People/Week  
 Patients relapsing : 15 min visit ————— People/Week

# Former Smokers



Former Smokers : 15 min visit ————— People  
Former Smokers : 7 min visit ————— People  
Former Smokers : 3 min visit ————— People

## Sample Partial Model Variable Definitions

Domain	Variable name	Variable Class	Variable Type	Definition/Assumption	Dimension
Primary Care	Average number of office visits for smokers	Auxiliary	Constant	Set to 3. Constitutes an average treatment episode. Assumes no more than 1 session per week.	Office visits
Primary Care	Average time for never smokers to leave the practice	Auxiliary	Constant	96 weeks (nearly 2 years).	Weeks
Primary Care	Average time for former smokers to leave the practice	Auxiliary	Constant	72 weeks (nearly 1.5 years).	Weeks
Primary Care	Average time for smokers to leave practice	Auxiliary	Constant	48 weeks (nearly 1 year).	Weeks
Primary Care	Effect of time devoted to intervention on former smokers	Auxiliary	Variable (lookup table)	More time devoted, stronger effect.	1/Week
Primary Care	Never smokers entering the practice	Flow	Constant	Rate at which new patients join the practice.	People/Week
Primary Care	Never smokers leaving the practice	Flow	Draining process	Rate at which patients leave one practice for another, move away, die, etc.	People/Week
Primary Care	Number of minutes devoted to intervention per office visit	Auxiliary	Constant	Set to either 3 minutes (minimal), 7 minutes (moderate), or 15 minutes (full) of tobacco counseling time (5As).	Minutes/Smoker/Office visit
Primary Care	Overall effectiveness of intervention	Auxiliary	Multiplicative	The number of smokers seen by a primary care physician X the effectiveness of the intervention X the patient's readiness to quit.	People/Week
Primary Care	Patients relapsing	Flow	Draining process	Rate at which patients who had quit start smoking again. Beginning of smoking episode. End of quitting episode.	People/Week
Primary Care	Former smokers entering the practice	Flow	Constant	2 per week. Rate at which new patients join the practice.	People/Week
Primary Care	Former smokers leaving practice	Flow	Draining process	Rate at which patients leave one practice for another, move away, die, etc.	People/Week
Primary Care	Smokers entering practice	Flow	Constant	2 per week. Rate at which new patients join the practice.	People/Week
Primary Care	Smokers leaving the practice	Flow	Draining process	Rate at which patients leave one practice for another, move away, die, etc.	People/Week
Primary Care	Time devoted to intervention per smoker	Auxiliary	Multiplicative	The number of session per treatment episode X the average time allocated to tobacco counseling.	Minutes/Smoker

## Sample Partial Model Variable Definitions

Domain	Variable name	Variable Class	Variable Type	Definition/Assumption	Dimension
Tobacco Use	Fraction of smokers who make an unaided quit attempt	Auxiliary	Fraction	The proportion of current smokers who quit without assistance from their provider.	dimensionless
Tobacco Use	Never Smokers	Stock	Initial = 100	Number of patients in practice who have never used tobacco.	People
Tobacco Use	Patients quitting	Flow	Draining process	Rate at which patients are quitting, once they are a patient at the practice. Beginning of quitting episode. End of smoking episode.	People/Week
Tobacco Use	Patient's relapse time	Auxiliary	Constant	6 weeks. Expected time before a patient would relapse.	Week
Tobacco Use	Former Smokers	Stock	Initial = 10	Number of patients in practice who have quit smoking.	People
Tobacco Use	Proportion of patients ready to quit	Auxiliary	Fraction	Patient's readiness level, on a scale from 0 (lowest) to 1.0 (highest).	dimensionless
Tobacco Use	Smokers	Stock	Initial = 40	Number of patients in practice who currently smoke	People