SPACE MONKEY 1.1

STD Prevention Allocation Consequences Estimator

Instruction Manual

A spreadsheet tool for sexually transmitted disease (STD) programs to estimate the impact of changes in their budget

For use with Microsoft Excel*

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ABOUT SPACE MONKEY

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This manual and the spreadsheet described in this manual reflect the views of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC).

CONTACT INFORMATION

For additional help or to provide feedback, please email your questions or comments to: Harrell Chesson (hbc7@cdc.gov).

BACKGROUND INFORMATION

For details on the costs, probabilities, and other assumptions applied in SPACE MONKEY, see the background paper and technical appendix:

Chesson HW, Ludovic JA, Berruti AA, Gift TL. "Methods for sexually transmitted disease prevention programs to estimate the health and medical cost impact of changes in their budget." Sexually Transmitted Diseases 2018; 45(1):1-7.

Version 1.1 corrects a glitch in Version 1.0 in Advanced Option 2. Advanced Option 2 was intended to give users the ability to change the background assumptions used in SPACE MONKEY. However, in Version 1.0, SPACE MONKEY applied default values in all calculations even when users entered their own values in place of the default values on the "Advanced Option 2" screen.

DISCLAIMERS

SPACE MONKEY is a product of the authors, not CDC.

This manual and the spreadsheet described in this manual reflect the views of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention (CDC).

Estimating the impact of budget changes for STD prevention is not an exact science.

Although this spreadsheet can be used to calculate evidence-based estimates of the impact of budget changes for your STD program, the results are subject to considerable uncertainty. The actual impact of changes to your budget could be substantially different than estimated by this spreadsheet. The range of estimates provided by this spreadsheet accounts for uncertainty only in selected parameters and does not reflect the full range of uncertainty in the estimates.

SPACE MONKEY should be used only for the STDs listed in the spreadsheet.

The spreadsheet provides estimates of the impact of budget changes on the following STDs: chlamydia, gonorrhea, syphilis, and STD-attributable HIV infections. It should not be used for any other outcomes.

SPACE MONKEY is subject to bugs, glitches, and other errors that could lead to invalid results.

If you notice any potential errors, please let us know by contacting Harrell Chesson (hbc7@cdc.gov) or one of the coauthors.

BASIC INSTRUCTIONS

STEP 1: OPEN SPACE MONKEY

When opening SPACE MONKEY, you might be prompted with a security warning. If so, you might be asked to "Enable Macros" or "Enable Contents" in order to use the spreadsheet.

You can choose to "Enable contents" (or "Enable Macros" or something similar) in order to use all of the features of SPACE MONKEY.

You can also choose not to "Enable contents." SPACE MONKEY can still be used if you elect not to enable the macros. However, you will have to go from worksheet to worksheet manually rather than by clicking the "next screen", "previous screen", and other command buttons.

STEP 2: INPUT THE REQUESTED INFORMATION IN THE WHITE BOXES

Enter information in the white boxes only.

To enter information in a white box, click that box and type your information. Then press "Enter" on your keyboard or click another white box. Repeat these steps to change a number that you have already entered.

For more details about the information requested from you, please see the screen-by-screen guide (page 4), the "examples" section (page 13), and the background paper noted on page 1.

STEP 3: VIEW YOUR RESULTS

After entering your information, you will advance to a screen that summarizes the estimated economic impact of budget changes for your STD program. This screen cannot be edited directly. To make changes, please go back to the previous screens where you entered your information in the white boxes.

The main results are shown in a table. However, you can also obtain a summary of the results in text format by clicking the button "See text summary of these results."

SCREEN-BY-SCREEN GUIDE

SCREEN 1: WELCOME SCREEN

The introductory screen shows the SPACE MONKEY logo. Use the "Click to begin" button to go to the next screen.

If the buttons do not work, it is possible that you need to "enable macros" as described on the previous page (see STEP 1: OPEN SPACE MONKEY). If you do not enable the macros, you will have to move from screen to screen manually. To do so, click the tab labeled "Page2" at the bottom left of the Excel screen.
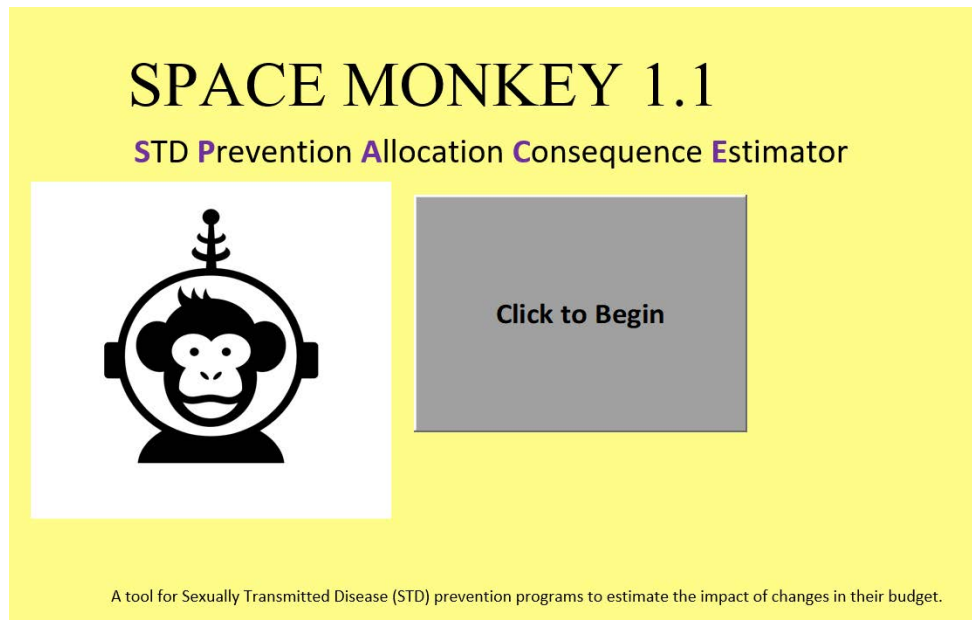
SCREEN 2: PROGRAM INFORMATION

On this screen, you will enter program information, including the overall size of the population and the reported number of chlamydia cases, gonorrhea cases, and syphilis cases. For syphilis, you should enter the number of primary, secondary, and early latent cases. For the population, you should enter the total population of your jurisdiction. For example, if you are a state program, you should enter the total population (all ages) of your state. For example, if the state population is 6.5 million, you should enter the number 6,500,000 in the white box for population.

To begin, we need a little information about your program

Enter information in the white boxes

Enter the total population size of your area
For example, if the overall population in your jurisdiction is 6.5 million people, enter "6,500,000"

Size of population served by STD program (all ages)	6,500,000

Reported number of chlamydia cases	30,500
Reported number of gonorrhea cases	8,000
Reported number of syphilis cases (Primary, secondary, and early latent)	1,000

Enter your reported number of cases for 2016

Previous screen	Next screen

SCREEN 3: BUDGET CHANGE INFORMATION

This tool estimates the effect of a permanent change in your budget.
Please enter the change in your budget in the appropriate box below.

Enter information in one of the two white boxes below

Amount of budget decrease	$200,000
OR	
Amount of budget increase	

Enter the dollar amount of the change in your budget

Use the top row for a budget decrease
Use the bottom row for a budget increase

Previous screen

Next screen

On this screen, you will enter information about the change in your budget. You will only need to enter information in one of the two white boxes on this screen. For a budget decrease, use the upper box.

For example, for a $200,000 budget decrease, enter the number 200,000 in the upper box. As another example, for a budget increase of $1.1 million, enter the number 1,100,000 in the lower white box.

SPACE MONKEY provides estimates of the effect of a permanent change in your budget. You enter the amount of the budget change, and SPACE MONKEY provides estimates of how this budget change will affect STD incidence (and medical costs) over the next 10 years. These estimates assume that the budget change is permanent, and thus is applied in all 10 years.

For example, suppose you have an annual budget of $1 million, and you want SPACE MONKEY to estimate the impact of a budget cut of $100,000. When you enter $100,000 in the white box for the budget decrease, SPACE MONKEY will examine a 10-year scenario in which your funding is $900,000 per year, as compared to a 10-year scenario in which your funding is $1 million per year.

SCREEN: OPTION TO ENTER YOUR OWN INFORMATION ABOUT DIS

Would you like to enter information about Disease
Intervention Specialists (DIS) in your program, such as:

- Number of DIS in your program
- Average annual salary per DIS
- Number of STD patients interviewed per DIS per year
- Percentage of STD cases interviewed by DIS

YES   NO

If you are not sure, choose "YES" to see the data entry screen

On this screen, you will be asked if you want to enter information about disease intervention
specialists (DIS) in your program, such as the number of DIS that you have, the average annual
salary per DIS, then number of STD patients interviewed per DIS per year, and the percentage of
reported STD cases that are interviewed by DIS.

Click "YES" if you would like to enter information for one or more of these items.

Click "NO" if you do not want to enter this information.

If you are unsure, you can choose "YES" to see the data entry table on the next screen. The data
entry table can be left partially or completely blank, so there is no harm to SPACE MONKEY if
you would like to see the date entry table before deciding what to do.

SCREEN 5: TABLE OF DISEASE INTERVENTION SPECIALIST (DIS) INPUTS

For each row in the table below, you can:
- •Enter your own value in the white box,

OR
- •Leave the white box blank to use the default value.

Input	Default value	Your value Leave blank to use the default value
Number of Disease Intervention Specialists (DIS) employed	15	15.00
Annual cost per DIS (salary plus fringe benefits)[*]	73,600	
Annual number of STD cases interviewed per DIS	400	
Percentage of chlamydia cases interviewed	12%	
Percentage of gonorrhea cases interviewed	17%	
Percentage of syphilis cases interviewed (Primary, secondary, and early latent)	89%	

Previous screen

Next screen

[*]Note: The annual cost per DIS should be the average annual salary of one DIS, including fringe benefits. If you do not know the fringe benefits, you can assume the total annual cost is equal to the DIS salary multiplied by 1.61.

You will see this screen only if you select "YES" on page 4.

For each row in the input table below, you can enter your own value in the white box, or you can leave the white box blank to use the default value.

The annual cost per DIS should be the average annual salary of one DIS, including fringe benefits. If you do not know the fringe benefits, you can assume the total annual cost is equal to the DIS salary multiplied by 1.61.   For example, if the annual salary of the DIS is $50,000, you could enter $80,500 as the total annual cost per DIS. The value of $80,500 was estimated by multiplying $50,000 by 1.61, and includes the cost of the salary and the estimated cost of benefits.

For the annual number of DIS employed, the most applicable number to use is the number of DIS that focus on STD work. You can use a fraction for the number of DIS. For example, you can enter 1.5 if you have 1 full-time DIS and one half-time DIS. As another example, if you have 8 full-time DIS who each spend about 40% of their time on STDs and 60% on other activities, you could enter 3.2 as the number of DIS (8 x 40% = 3.2).

If you have a DIS who works on both STDs and HIV, please make an attempt to estimate the fraction of the DIS time that is spent on STDs. If you do not have any way to estimate this, than you can count this as 100% for STD for the purposes of this exercise.

SCREEN 6: FINAL PAGE BEFORE RESULTS

Your results will be shown on the next screen.

Go back and change inputs

Continue to results
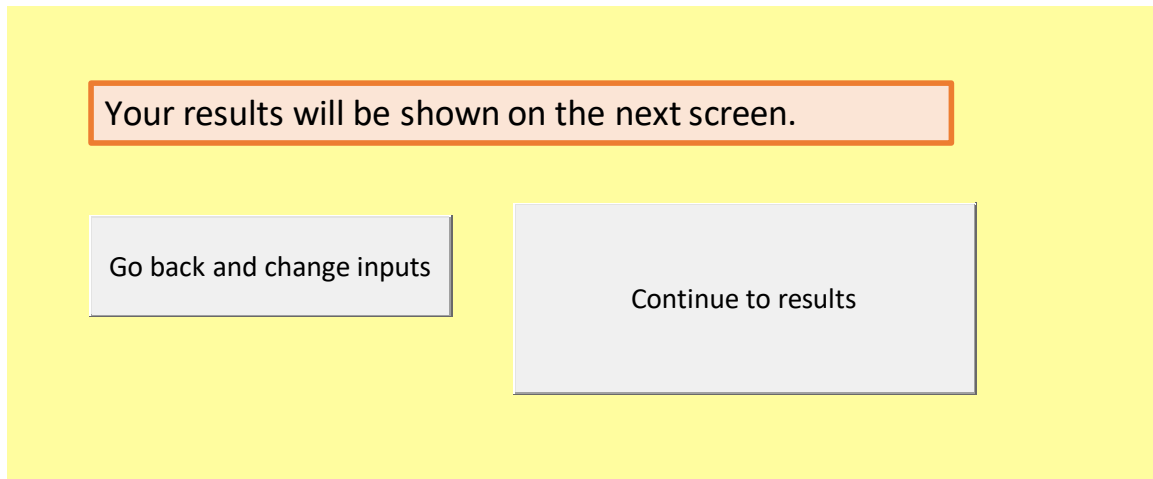
This screen lets you know that the required data have been entered and that SPACE MONKEY is ready to show you the results.

You can continue forward to see the results, or you can go back and make changes to your inputs. However, even after you see your results, SPACE MONKEY will let you go back and change your inputs if you wish.

SCREEN 7 (RESULTS): TABLE OF ESTIMATES

Results: Estimated impact of change in STD prevention funding

Year	Percentage increase in STDs due to budget cut	Additonal number of syphilis infections	Additonal number of gonorrhea infections	Additonal number of chlamydia infections	Additonal number of STD-attributable HIV infections	Additonal STD costs	Additonal HIV costs	Total additonal costs (STD and HIV)
Year 1	0.81%	9	134	460	0.4	$134,543	$138,457	$273,000
Year 2	1.37%	16	227	782	0.7	$222,061	$228,521	$450,583
Year 3	1.76%	20	293	1,008	0.9	$277,735	$285,815	$563,550
Year 4	2.04%	24	339	1,166	1.0	$311,878	$320,951	$632,829
Year 5	2.23%	26	371	1,276	1.1	$331,496	$341,139	$672,635
Year 6	2.37%	27	393	1,354	1.2	$341,346	$351,276	$692,623
Year 7	2.46%	28	409	1,408	1.2	$344,661	$354,687	$699,348
Year 8	2.53%	29	420	1,446	1.2	$343,631	$353,628	$697,259
Year 9	2.58%	30	428	1,472	1.3	$339,745	$349,629	$689,374
Year 10	2.61%	30	433	1,491	1.3	$334,011	$343,727	$677,738
10-year total		239	3,446	11,862	10.2	$2,981,107	$3,067,830	$6,048,937

[See text summary of these results]　　Note: The bottom row is the only row with cumulative results. The first 10 rows of results (Year 1 through Year 10) show the impact of the change in funding for the given year compared to the year before the change in funding (Year 0).

[Previous screen]　[See advanced options]　[Return to start]

This table provides the estimate of the effect of the budget change for a 10-year period. There is a row for each year from 1 to 10, and a total row which shows the cumulative results over all ten years.

For an increase in budget, the table will provide estimates of the percentage decrease in STIs due to the budget increase, as well as the reduction in the number of STIs and the reduction in costs.

For a decrease in budget, the table will provide estimates of the percentage increase in STIs due to the budget decrease, as well as the increase in the number of STIs and the increase in costs.

The bottom row labeled "10-year total" is the only row with cumulative results. The first 10 rows of results (Year 1 through Year 10) show the impact of the change in funding for the given year compared to the year before the change in funding (Year 0). For example, if the value for the "Percentage increase in STIs due to budget cut" is 4% for year 5, this means that STD incidence rates in year 5 are estimated to be 4% higher than they would have been in year 5 had there not been a budget cut. The 4% value for year 5 does NOT mean that STD rates in year 5 will be an estimated 4% higher than in year 4.

As another example, suppose that the column "Additional number of syphilis infections" is 9 in year 1 and 16 in year 2. This would mean that in year 1 of the budget cut, there would be an estimated 9 additional syphilis infections in year 1 than there would have been without the budget cut. In year 2 of the budget cut, there would be an estimated 16 additional syphilis infections in year 2 than there would have been without the budget cut. The total number of additional syphilis cases as a result of the budget cut over the first two years would be 25.

The costs are limited to the direct medical costs of STIs and STD-attributable HIV and do not include productivity costs.

SCREEN 8: TEXT VERSION OF RESULTS

Results: Estimated impact of change in STD prevention funding

Based on published evidence of the impact of STD prevention programs and the cost of STDs, a budget cut of $200,000 will result in:

• In the first year alone, there will be an estimated increase of 9 cases of syphilis (range: 4 to 13), 134 cases of gonorrhea (range: 64 to 194), 460 cases of chlamydia (range: 219 to 667), and 0.4 cases of STD-attributable HIV (range: 0.0 to 1.1).

• Over 10 years, there will be an estimated cumulative increase of 239 cases of syphilis (range: 75 to 502), 3,446 cases of gonorrhea (range: 1,077 to 7,224), 11,862 cases of chlamydia (range: 3,709 to 24,869), and 10.2 cases of STD-attributable HIV (range: 0.3 to 42.1).

• Over 10 years, there will be an estimated cumulative increase in direct medical costs of $6,049,000 (range: 1,005,000 to 18,557,000) due to increases in STIs and STI-attributable HIV infections.

With a budget cut of $200,000, positions for disease intervention specialists will be eliminated, resulting in:

• No DIS interviews or effective behavioral counseling for an estimated 1,087 patients with STDs.
• DIS are public health professionals who work to find people diagnosed with syphilis and other STDs. DIS work to find new cases of the disease — and to prevent new ones from happening.
• In addition to STDs, DIS fight other disease outbreaks and epidemics, including Ebola, flu, anthrax, and SARS—without these DIS, we could be underprepared for emergencies.
• Since an estimated 1 in 4 DIS interviews identifies a new STD case, an estimated 272 people with syphilis, gonorrhea, or chlamydia will not know they are infected, will not be treated, and will be more likely to spread STDs in their communities.

Previous screen

On this screen, you will see a text summary of the key results of SPACE MONKEY. If you want, you can copy and paste this text into another document.

In addition to providing the point estimates from the results table, this text summary page also provides a range of estimates. For more information about these ranges, see the technical appendix and the advanced options screen below.

SCREEN 9: ADVANCED OPTIONS MENU

ADVANCED OPTIONS MENU

> Change the calculation method

> Change one or more of the background assumptions

> Get more information about SPACE MONKEY calculations

> See the complete lower bound and upper bound results

> Go back to results
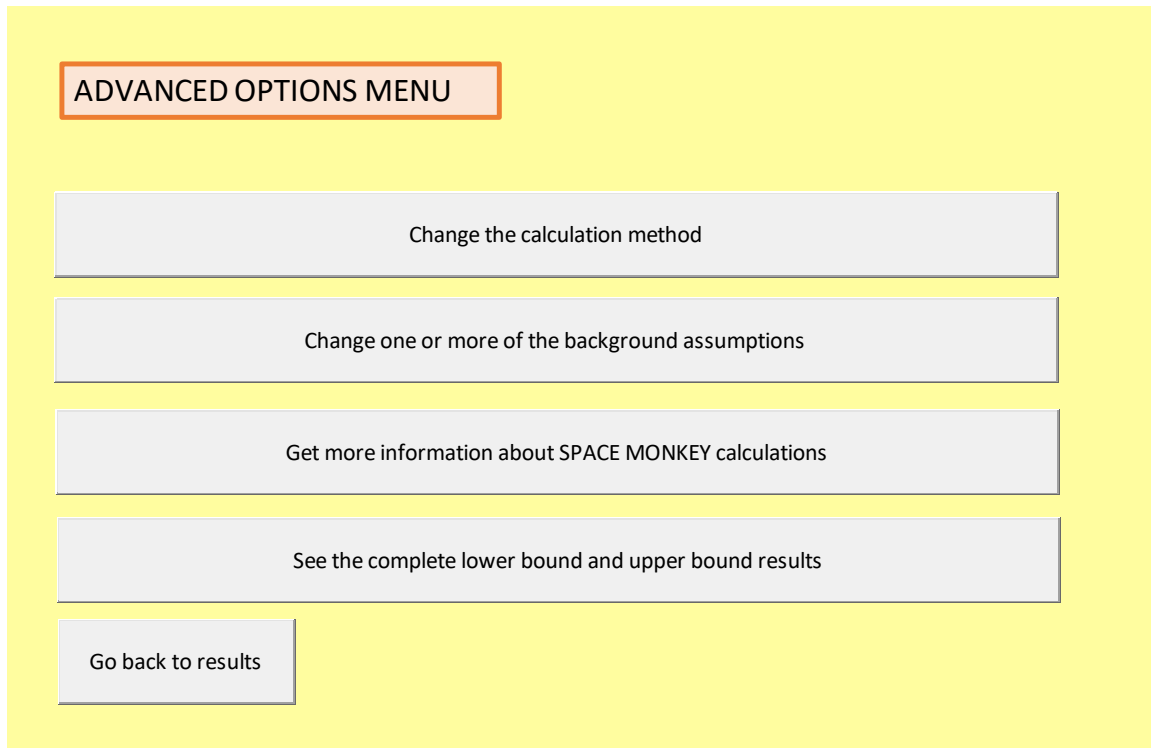
On this page, you can choose several additional options. You can:

Change the calculation method
SPACE MONKEY uses two methods to estimate the effect of a budget change, and reports the average of the two methods. To use one of the methods in particular, choose this option. See the "Advanced Options 1" screen for more information.

Change one or more of the background assumptions
In addition to the information you provide, SPACE MONKEY uses numerous other assumptions to generate the results. The background manuscript and technical appendix provide more details of these additional assumptions. To change any of these assumptions, choose this option. See the "Advanced Options 2" screen for more information.

Get more information about the SPACE MONKEY calculations
You can choose this option for a brief overview of the methods used by SPACE MONKEY. However, for a complete description of the SPACE MONKEY calculations, you can refer to the background manuscript and technical appendix.

See the complete lower bound and upper bound results
The table of results provides point estimates of the results. The text summary provides information about the range of results for some of the outcomes. If you would like to see the table of results for the lower bound scenario and the upper bound scenario, choose this option. See the technical appendix for details on how the ranges were calculated.

SCREEN 10: ADVANCED OPTIONS 1

<table>
<tr><td colspan="2">Advanced Option 1: Calculation method (See the SPACE MONKEY manual for details)</td></tr>
<tr><td>Which calculation approach do you want to use?</td><td>Use the average of the two approaches (default)</td></tr>
<tr><td>Previous screen</td><td>Enter your selection in the white box, using the drop-down menu</td></tr>
<tr><td>Go back to results</td><td></td></tr>
</table>
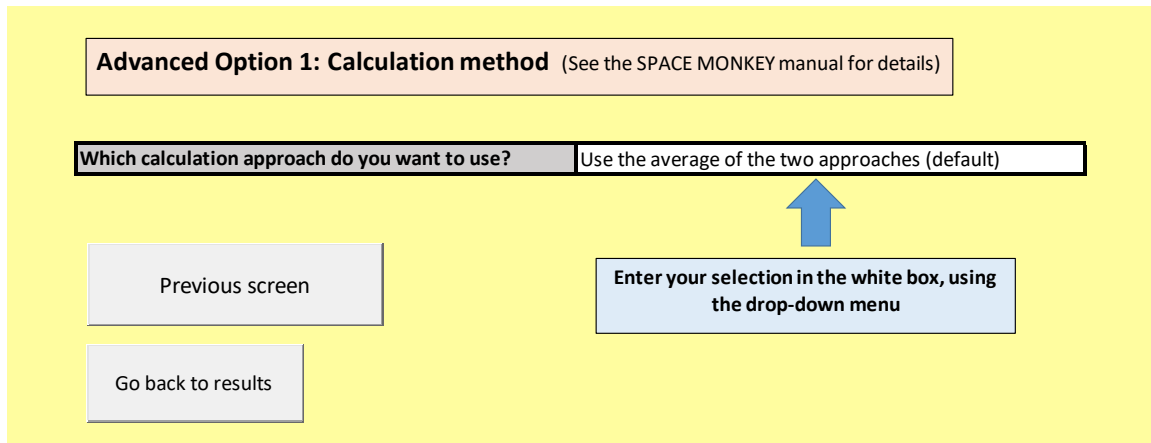
SPACE MONKEY uses two distinct approaches to estimate the potential impact of changes in STD prevention resources on STD incidence. By default, SPACE MONKEY presents the average results from these two approaches.

The first approach (the historical formula approach) was based on the observed relationship between state-level gonorrhea case rates and state-level STD prevention funding over an 18-year period.

The second approach (the DIS approach) was based on the observed association between DIS activities and subsequent gonorrhea case rates at the population-level in several settings.

Either or both of these approaches could be used, depending on factors such as the needs of the user and the data available to the user. If you would like to use one method in particular, use the drop-down menu to select your preferred method.

References:

Funding formula approach: Chesson HW, Harrison P, Scotton CR, Varghese B. Does funding for HIV and sexually transmitted disease prevention matter? Evidence from panel data. Eval Rev 2005;29(1):3-23.

DIS approach: Du P, Coles FB, Gerber T, McNutt LA. Effects of partner notification on reducing gonorrhea incidence rate. Sex Transm Dis 2007;34(4):189-194.

SCREEN 11: ADVANCED OPTIONS 2

Input	Default value	Your value (Leave blank to use the default value)
Percent change in STDs relative to % change in number of STD cases interviewed	0.2	
Percent increase in STDs per $1 per capita decrease in STD prevention funding	0.16	
β parameter of residual impact, used to estimate new equilibrium STD incidence	0.7	
Annual number of syphilis infections, nationally	55,400	
Annual number of gonorrhea infections, nationally	820,000	
Annual number of chlamydia infections, nationally	2,860,000	
Average lifetime cost per syphilis infection	$770	
Average lifetime cost per gonorrhea infection	$230	
Average lifetime cost per chlamydia infection	$210	
Average lifetime cost per HIV infection (both sexes)	$351,000	
Probability of STD-attributable HIV infection, per syphilis infection	0.0105	
Probability of STD-attributable HIV infection, per gonorrhea infection	0.0005	
Probability of STD-attributable HIV infection, per chlamydia infection	0.0005	
Reported number of syphilis cases, nationally	48,045	
Reported number of gonorrhea cases, nationally	395,216	
Reported number of chlamydia cases, nationally	1,526,658	
Discount rate	0.03	
Number of STD interviews required to yield 1 new case	4	

This option allows you to change one or more of the background assumptions. For each row in the table, you can enter your own value in the white box, or you can leave the white box blank to use the default value.

If you enter your own value(s) in the white box, remember to delete the value(s) later if you decide you no longer want to use your own value(s) and want to use the default value(s) instead.

SCREEN 12: ADVANCED OPTIONS 3

Advanced Option 3: More information about SPACE MONKEY
Click the button below for more information

See illustration of calculation methods

Previous screen

Notes:

For a complete description of the methods, see the background manuscript and the technical appendix.

Chesson HW, Ludovic J, Berruti A, Gift TL. "Methods for sexually transmitted disease prevention programs to estimate the health and medical cost impact of changes in their budget." *Sexually Transmitted Diseases*, forthcoming. More information will be added when available.

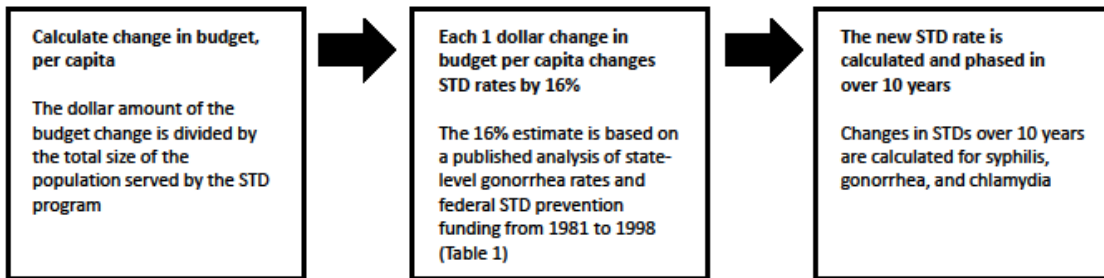Choose this option to see an illustration of the SPACE MONKEY methods.

If you choose this option, you will see a figure illustrating the two methods used by SPACE MONKEY. This figure is based on Figure 1 in the background manuscript. For a complete description of the SPACE MONKEY calculations, you can refer to the background manuscript and technical appendix.
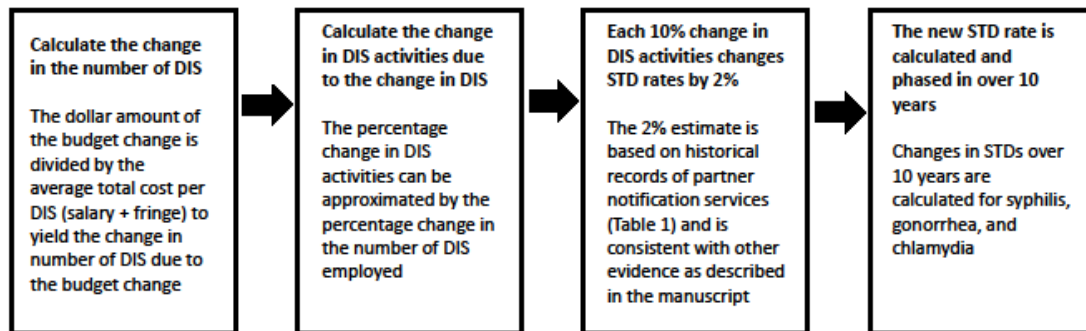
SCREEN 13: SCHEMATIC

This is the screen that shows the illustration of the SPACE MONKEY methods.

This illustration is based on Figure 1 in the background manuscript. For a complete description of the SPACE MONKEY calculations, you can refer to the background manuscript and technical appendix.

Panel A: Historical formula approach

Calculate change in budget, per capita	Each 1 dollar change in budget per capita changes STD rates by 16%	The new STD rate is calculated and phased in over 10 years
The dollar amount of the budget change is divided by the total size of the population served by the STD program	The 16% estimate is based on a published analysis of state-level gonorrhea rates and federal STD prevention funding from 1981 to 1998 (Table 1)	Changes in STDs over 10 years are calculated for syphilis, gonorrhea, and chlamydia

Panel B: Disease Intervention Specialist (DIS) approach

Calculate the change in the number of DIS	Calculate the change in DIS activities due to the change in DIS	Each 10% change in DIS activities changes STD rates by 2%	The new STD rate is calculated and phased in over 10 years
The dollar amount of the budget change is divided by the average total cost per DIS (salary + fringe) to yield the change in number of DIS due to the budget change	The percentage change in DIS activities can be approximated by the percentage change in the number of DIS employed	The 2% estimate is based on historical records of partner notification services (Table 1) and is consistent with other evidence as described in the manuscript	Changes in STDs over 10 years are calculated for syphilis, gonorrhea, and chlamydia

SCREEN 14: LOWER BOUND RESULTS

Lower bound results: Estimated impact of change in STD prevention funding   Advanced Option 4: Range of results

Year	Percentage increase in STDs due to budget cut	Additonal number of syphilis infections	Additonal number of gonorrhea infections	Additonal number of chlamydia infections	Additonal number of STD-attributable HIV infections	Additonal STD costs	Additonal HIV costs	Total additonal costs (STD and HIV)
Year 1	0.38%	4	64	219	0.0	$32,000	$5,000	$37,000
Year 2	0.56%	6	93	320	0.0	$91,000	$9,000	$100,000
Year 3	0.64%	7	106	366	0.0	$101,000	$10,000	$111,000
Year 4	0.68%	8	112	387	0.0	$104,000	$11,000	$114,000
Year 5	0.69%	8	115	397	0.0	$103,000	$10,000	$114,000
Year 6	0.70%	8	117	402	0.0	$101,000	$10,000	$112,000
Year 7	0.71%	8	117	404	0.0	$99,000	$10,000	$109,000
Year 8	0.71%	8	118	405	0.0	$96,000	$10,000	$106,000
Year 9	0.71%	8	118	405	0.0	$93,000	$10,000	$103,000
Year 10	0.71%	8	118	405	0.0	$91,000	$9,000	$100,000
10-year total		75	1,077	3,709	0.3	$911,000	$94,000	$1,005,000

Go back to base case results

Note: The bottom row is the only row with cumulative results. The first 10 rows of results (Year 1 through Year 10) show the impact of the change in funding for the given year compared to the year before the change in funding (Year 0).

Go to upper bound results

Go to "advanced options" menu

If you choose the advanced option "See the complete lower bound and upper bound results" you will first be taken to the lower bound results table. From this screen, you have three options: go back to the base case results; go to the upper bound results, or go back to the "advanced options" menu.

SCREEN 15: UPPER BOUND RESULTS

You will see a similar table showing the upper bound results if you choose the option "Go to upper bound results" on the lower bound results screen. From this screen, you have three options: go back to the base case results; go to the lower bound results, or go back to the "advanced options" menu.

QUESTIONS ABOUT USING SPACE MONKEY

Q. I have 10 DIS. 8 of them perform STD work about 20% of the time. 1 performs STD work full time. 1 performs STD and HIV work, but I am not sure how much time is allocated between HIV and other STDs. What should I enter for the number of DIS?

A. The 8 DIS at 20% time can be counted as 1.6. The full-time STD DIS can be counted as 1. For the DIS who performs STD and HIV work, if you do not know the percentage of time dedicated to STDs, then you can count them as full time STD for the purposes of this exercise. So, you would enter 3.6, which is 1.6 + 1 + 1.

Q. If I had a budget cut, I would not cut my number of DIS. Does this mean the DIS results are not applicable?

A. SPACE MONKEY uses the average of two approaches to estimate the effect of a budget change, the "historical formula approach" and the "DIS approach". The DIS approach assumes that the budget change will be entirely focused on DIS. If you think that it is unrealistic that your number of DIS would change, then you might not want to use the intermediate outcomes presented in the text summary that deal with DIS activities, such as the change in number of DIS interviews performed. In the text summary of results, these are the results in the bottom half of the screen. However, the results in the top half of this screen regarding the change in STD cases and costs, should still be applicable. The reasoning is that your change in budget will lead to some changes in your program, and the effect of these changes can be approximated by assuming these changes will have an effect similar to that of a change in DIS.

However, if you are not comfortable using the DIS approach because of this issue, you can certainly choose not to do so. You can instead ask SPACE MONKEY to use the "historical formula approach" as described in the advanced options screen.

Q. In the table of results, the percentage change does not seem to me to be consistent with the reduction in number of STD cases. For example, a 1% increase in STIs was estimated, but the estimated increase in number of gonorrhea infections was more than 1% of my reported gonorrhea cases.

A. SPACE MONKEY predicts the estimated change in the number of infections, which includes reported cases and unreported infections. SPACE MONKEY estimates the number of "actual infections" in your jurisdiction based on your reported number of cases as well as estimates of the incidence of STDs nationally.

Q. What are STD-attributable HIV infections and how are they estimated?

A. STDs can facilitate the transmission and acquisition of HIV. SPACE MONKEY applies estimates from a simple model on the probability of an STD-attributable HIV infection per STD.

See the background paper and technical appendix for the specific assumptions.

Q. Can I see a list of the key assumptions in SPACE MONKEY without having to read the entire background paper and technical appendix?

A. See page 16 of this instruction manual for the summary table of key assumptions.

Q. The default value for the number of DIS employed by my program is not accurate. Why is this, and should I be worried?

A. SPACE MONKEY estimates your number of DIS based on the number of cases interviewed and the average number of interviews conducted per year per DIS.

However, SPACE MONKEY likes to have as much information as possible. If you have information on these key inputs, you can enter this information. Simply choose "Yes" when asked "Would you like to enter information about Disease Intervention Specialists (DIS) in your program?"

It is important to note that if you do not enter your own information, SPACE MONKEY will perform calculations about DIS activities in your project area based on national data. Even though SPACE MONKEY might not accurately estimate the number of DIS you employ, SPACE MONKEY calculates relative changes in DIS activities due to the budget change. Thus, SPACE MONKEY's estimate of the absolute number of DIS that you employ is not particularly important.

Q. The SPACE MONKEY results do not seem to change when I increase the size of the budget change. Why is this?

A. It could be that the budget changes you are examining are very large. SPACE MONKEY is better suited to examine relatively small changes in funding.

SPACE MONKEY uses two approaches to estimate the results, the historical formula approach and the DIS approach. For each approach, SPACE MONKEY places limits on the budget change. When using the historical formula approach, SPACE MONKEY will cap the change in budget at $2 per capita. When using the DIS approach, SPACE MONKEY will cap the change in DIS at 100%, so that the number of DIS will not decrease by more than 100% in the event of a budget cut and will not increase by more than 100% in the event of a budget increase. If your budget change exceeds these caps, then additional budget changes will not cause a change in the SPACE MONKEY estimates.

TROUBLESHOOTING

Problem: Nothing happens when clicking "next screen" or "previous screen" or any of the other command buttons.

Possible solution: Be sure you have pressed "Enter" on your keyboard after adding information to the white boxes.

Problem: The results screen contains the term "#VALUE!" rather than estimates of the number of prevented cases or costs.

Possible solution: A common cause of this error is that non-numeric information has been entered in the white boxes on one or more of the input screens. Be sure that each white box is either blank or contains numeric characters only. For example, make sure the letter "O" is not used instead of the number "0". It is okay if the white boxes are blank, but they cannot contain non-numeric characters (except for the "start date" and "end date" boxes, which can contain text or numbers or both).

Possible solution: Be sure that you have entered information in all 4 boxes on Page 2 (population and reported case data) as well as the budget change information on Page 3. SPACE MONKEY cannot perform the calculations without this information.

Possible solution: Be sure that you did not enter a budget cut and a budget increase on Page 3. This will confuse SPACE MONKEY.

For additional help, please contact the lead author at hbc7@cdc.gov.