

CxCaSIFT: System Impact Filtering Tool

User's guide

Step 1: Choose your model

SIFT allows users to consider three types of screening programs:

1. Screen → triage → treatment (**red tabs**)
2. Screen & treat (**green tabs**)
3. Screen → Confirmatory screen → triage → treatment (**blue tabs**)

Please ensure that you are referring to the model that best suits the screening program you wish to analyze. Read the descriptions and examples of the models below if you are unsure which one applies to your screening program.

Model 1: Screen → triage → treatment

Refer to the first red tab in the SIFT if your screening program involves a screening test that refers screen-positive women to be diagnostically triaged to determine proper treatment.

For example, a Pap-based program in which a Pap screen-positive woman is referred for a follow up visit during which she is diagnostically triaged with colposcopy and her histology result is used to determine the most appropriate treatment.

Model 2: Screen & treat

Refer to the first green tab in the SIFT if your screening program follows a screen & treat model in which women are screened and the screen-positive women have the option to get treated immediately following receipt of their positive results.

For example, an HPV-test-based program in which HPV-positive women are referred for ablative treatment. Keep in mind that these types of scenarios often involve an informal “triage” or visual inspection of the cervix before the ablative treatment is conducted to ensure eligibility for the ablative treatment. This process is considered to be a part of preparing to apply the treatment and occurs immediately before the treatment is applied, and should therefore not be considered as a separate diagnostic triage step like it is in Model 1.

Model 3: Screen → Confirmatory screen → triage → treatment

Refer to the first blue tab in the SIFT if your screening program requires any screen-positive women to undergo a confirmatory screening test at their follow-up visit, followed by a diagnostic triage that determines the most appropriate treatment.

For example, a screening program in which women are first screened with a Pap test, then the Pap-positive results are confirmed with a VIA screening test, and only the confirmed positive results get referred for diagnostic triage with colposcopy and the histology result determines the appropriate treatment.

Step 2: Input model parameters

SIFT allows you to parameterize the models by inputting information specific to your context, the assumptions you wish to test, and screening and triage test sensitivity and specificity.

Population & assumptions

Target population size of screen-eligible women:

Estimate the population of screen-eligible *women* who will be participating in your screening program. Take into account eligibility requirements for the particular screening test you are choosing. For example, if the screening test is only offered to women 30-49 years old, only estimate the number of 30-49-year-old women in the population.

Screening interval:

Enter the screening interval *in years* for your screening program.

CIN2/3 prevalence in target population:

Consult existing literature to estimate the CIN2/3 prevalence in your target population.

Percent screened:

Make a realistic estimate of the percentage of your target population that is likely to get screened by your screening program. It is useful to base this estimate on the current percentage of the target population getting screened under the current screening program. Will your screening program increase screening coverage? By how much? Consider how acceptable the screening test will be to your target population. For example, if your screening test requires women to take their own sample, will they indeed be comfortable with doing that? It is important to justify any estimated increases in coverage as a result of your screening program and also to accept that there are certain barriers to getting screened that the program will not be able to address.

Percent diagnostically triaged (*only for models 1 & 3*)

Make a realistic estimate of the percentage of your screen-positive population that is likely to make it to their follow up visit for diagnostic triage. Again, consider basing your estimate on the current percentage of screen-positive women making it to their follow-up visit. Take into account whether the screening and triage tests occur in the same health center, and if not, consider how complicated the referral system for the women and how likely they are to complete it. It is important to justify any estimated increases in triage coverage as a result of your screening program and also to accept that there are certain barriers to triage attendance that the program may not be able to address.

Percent treated

Make a realistic estimate of the percentage of your screen-positive (or “trriage-positive”, for models 1 and 3) population that is likely to follow through the continuum of care structured by your screening program to get treated. Once again it is useful to base estimates on current statistics regarding treatment, if available. It is important to justify any estimated increases in

treatment coverage as a result of your screening program and also to accept that there are certain barriers to getting treatment that your program may not be able to address.

Screening & triage tests

Screening test chosen

From the drop down menu, choose the screening test that is part of your screening program. Choose from molecular HPV, Pap or VIA tests.

Screening test sensitivity for CIN 2/3

Estimate the sensitivity of your screening test. The tool provides a reference table with the average sensitivity for each test according to a cost-effectiveness analyses in three developing countries. Take into account that VIA and Pap are highly subjective tests and their sensitivity will depend largely on the training and experience of the professional interpreting the test result. The sensitivity of an HPV molecular test is less likely to fluctuate as it is much less subjective and less prone to error.

Screening test specificity for CIN 2/3

Estimate the specificity of your screening test. The tool provides a reference table with the average specificity for each test according to a cost-effectiveness analyses in three developing countries. Take into account that VIA and Pap are highly subjective tests and their sensitivity will depend largely on the training and experience of the professional interpreting the test result. The specificity of an HPV molecular test is less likely to fluctuate as it is much less subjective and less prone to error.

Confirmatory test chosen (*only for model 3*)

If your screening program requires a confirmatory screening test, choose which screening test will provide the confirmatory result. Choose from molecular HPV, Pap or VIA tests.

Confirmatory test sensitivity for CIN 2/3 (*only for model 3*)

Estimate the sensitivity of the confirmatory screening test. The tool provides a reference table with the average sensitivity for each test according to a cost-effectiveness analyses in three developing countries. Take into account that VIA and Pap are highly subjective tests and their sensitivity will depend largely on the training and experience of the professional interpreting the test result. The sensitivity of an HPV molecular test is less likely to fluctuate as it is much less subjective and less prone to error.

Confirmatory test specificity for CIN 2/3 (*only for model 3*)

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Diagnostic (triage) test chosen (*only for models 1 & 3*)

If your screening program involves a diagnostic triage, choose the test from the drop down menu. Choose from HPV molecular test, VIA test, Pap test or colposcopy-guided biopsy.

Diagnostic test sensitivity for CIN 2/3 (only for models 1 & 3)

Estimate the sensitivity of your chosen diagnostic triage test. The tool provides a reference table with the average sensitivity for each test according to a cost-effectiveness analyses in three developing countries. Take into account that VIA, Pap and colposcopy-guided biopsy are highly subjective tests and their sensitivity will depend largely on the training and experience of the professional interpreting the test result. The sensitivity of an HPV molecular test is less likely to fluctuate as it is much less subjective and less prone to error.

Diagnostic test specificity for CIN 2/3 (only for models 1 & 3)

Estimate the specificity of your chosen diagnostic triage test. The tool provides a reference table with the average specificity for each test according to a cost-effectiveness analyses in three developing countries. Take into account that VIA, Pap and colposcopy-guided biopsy are highly subjective tests and their sensitivity will depend largely on the training and experience of the professional interpreting the test result. The specificity of an HPV molecular test is less likely to fluctuate as it is much less subjective and less prone to error.

Step 3: Interpretation of output

SIFT is designed to calculate the parameters entered and allow you to interpret the impact of your screening program in two different ways: a summary table and an impact graphic.

Summary table

The summary table provides a general overview of your screening program's impact on disease and its resource requirements. The first half of the table intentionally summarizes your estimated parameters to facilitate comparisons with different screening programs. Note that the impact and resource requirements sections display *annual* figures. If your screening interval is every five years, the summary table shows the program's impact on disease for one fifth of the target population of eligible women. In other words, the denominator to calculate percentage of women treated or untreated is your target population divided by five. Similarly, the figures for resource requirements are the *annual* resource requirements for the program.

Annual impact graphic

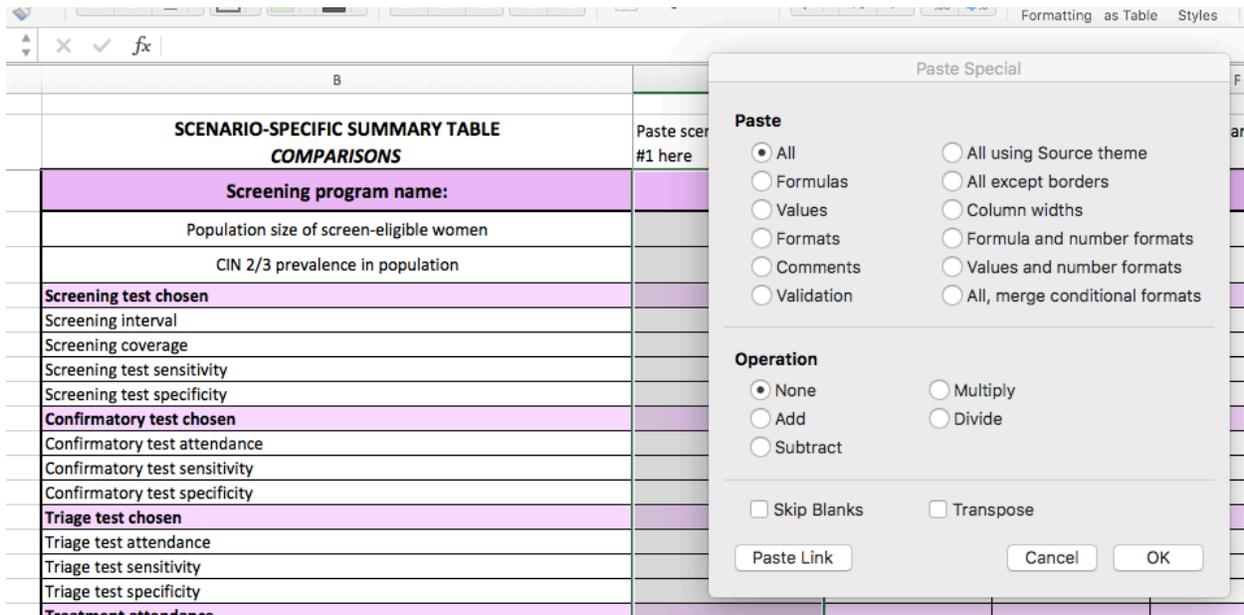
This graphic displays the fate of both healthy women and women with a precancerous lesion at every point in your screening program's continuum of care. It allows you to identify exactly when and why women are dropping out of your screening program, giving you the opportunity to make specific adjustments as necessary to improve the overall outcome. Like the summary table, the figures reflect *annual* impact and are highly dependent on your screening interval.

Step 4: Compare different scenarios

One of the original intentions of this tool was to facilitate comparisons of multiple different programs to promote well-informed decision making in the program design phase.

The final tab in the excel tool (purple) allows users to copy and paste the output columns of the summary tables for a side-by-side analysis. The format of each model's summary tables is identical, and therefore allows users to copy and paste output columns into the purple tab with the comparison. Note that the cells in the output columns of the summary tables are linked to the original input tab of the tool through a formula. This requires use of the "paste special" command to successfully copy the values and avoid formula-related errors.

1. Copy the output column you wish to include in your comparison from the original summary table
2. Enter the tab with the comparison table and highlight the cells where you wish to paste the output column you have just copied. Refer to the arrows in the tool itself.
3. Click edit, then "paste special" and choose the **values** option



The comparison tab is structured to compare up to four different scenarios, although users are free to add additional columns and compare more scenarios.

The annual impact graphics may also be used to compare the impact of each step of different screening programs. Note that the tabs with the graphics have been formatted to allow for easy printing on standard A4 paper.