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# Risk Stratification Workbench Cheat Sheet

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Enter information about community priorities on a scale of 1-100 (see, e.g. Section 3.1)

Enter the prevalence of COVID-19 based on the best information available using a probability scale [0.0 - 1.0] (see, e.g. Section 2.3)

Note the scale for risk stratification system; K1 is lowest risk...K7 is riskiest. (See Section 2.1)

If there are fewer than seven levels in the risk stratification system, start with the riskiest levels (bottom to top) until all levels are entered; then fill the rest of the table by repeating performance for the least risky.

Enter data on the accuracy of the risk stratification method. (see, e.g. Section 3.1)

(e.g. TP = % of COVID-19 infected person is classified as being "high risk")

## Risk Stratification Workbench ver 0.3

At tool for understanding #TotalHarmMinimization policies

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Benefit of a non-infected person getting in (bTN):

Benefit of a COVID-19-infected person being stopped (bTP):

Cost of non-infected person being stopped (cFP):

Cost of a COVID-19-infected person getting in (cFN):

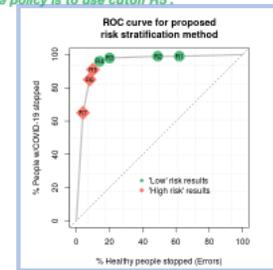
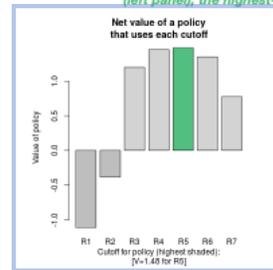
Estimate of COVID-19 prevalence (p<sub>C</sub>/<sub>S</sub>):

Click on values then enter performance for the risk stratification method or paste from spreadsheet

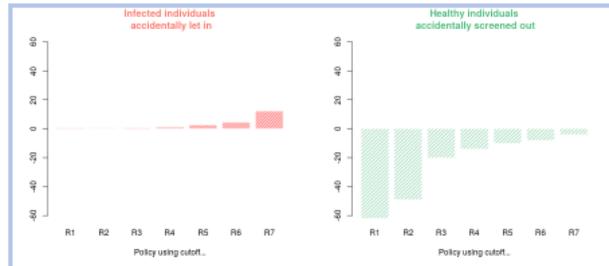
	TP	TN
R1	99	38
R2	99	51
R3	98	80
R4	96	86
R5	91	90
R6	85	92
R7	65	96

Enter assumptions about the accuracy of the risk stratification method you wish to analyze, and the current prevalence of COVID-19 using the panel on the left. Results are shown below. For details on methodology, see [paperlink]

Based on the risk stratification strategy and assumption about prevalence, costs and benefits (left panel), the highest-value policy is to use cutoff R5.



If the prevalence is 20%, then for every 100 people screened under the policy, this is the number who would be misstratified using each cutoff...



View plot showing the relative value of a policy using each risk stratification as a cutoff (see, Section 3.1)

View plot showing the ROC curve for the stratification method (see, Section 3.1)

View plots showing how policies based on each possible risk cutoff level in the system would perform. (see, Section 2).

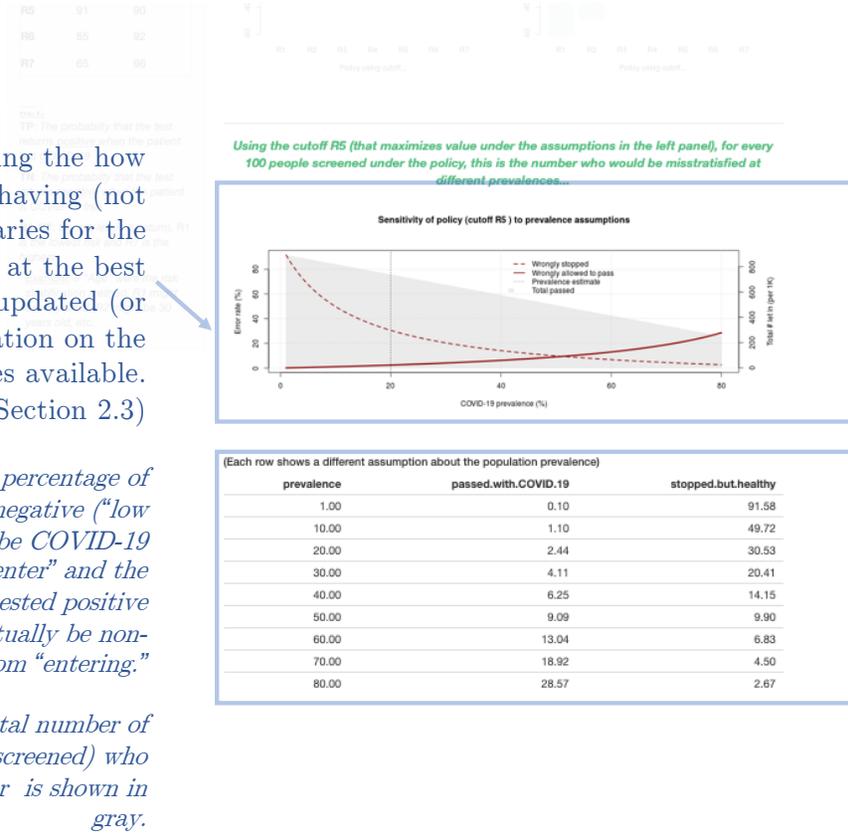
The height of the bars indicates the number infected individuals who should not have been approved but were allowed to "enter" (left) and the number of uninfected individuals who should have been approved but were not allowed to "enter" (right).

For details, see: Stein, R. M (2020), "Where to draw the line for risk stratifications: Designing return-to-work policies that consider diagnostic error, costs, benefits and COVID-19."

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View the graph showing the how the true probability of having (not having) COVID-19 varies for the risk stratification system at the best cutoff would change if updated (or more accurate) information on the prevalence becomes available. (see, Section 2.3)

The graph shows the percentage of individuals who tested negative (“low risk”) would actually be COVID-19 infected and allowed to “enter” and the number of individuals who tested positive (“high risk”) who would actually be non-infected, but prevented from “entering.”

In addition, the total number of individuals (per 1,000 screened) who would be allowed to “enter” is shown in gray.

View the table showing the numerical values implied by the figures in the graph, per 1,000 individuals screened. (see, e.g. Section 2.3)

All values are calculated based on the risk stratification profile entered, and assuming that the policy continued to use the best cutoff as determined by the current prevalence assumption.

Note that were the prevalence rate to be different than the current assumption, different cutoff might be implied.

For details, see: Stein, R. M (2020), “Where to draw the line for risk stratifications: Designing return-to-work policies that consider diagnostic error, costs, benefits and COVID-19.”