

Real-world application of reach ratios:

A tool to monitor quitline reach among priority populations

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PDA

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What is a reach ratio?

A reach ratio compares the proportion of quitline participants from a subgroup to the proportion of the target population of tobacco users from the same subgroup.

ReRa = 1

proportionate representation
of subgroup in QL population

ReRa < 1

subgroup is under-represented in QL
population; opportunities may exist

ReRa > 1

subgroup is over-represented in QL
population; don't fret, but look at
complementary subgroups



Key Reference:

The Reach Ratio – A new indicator for comparing quitline reach into smoking subgroups.

H. Sharon Campbell, N. Bruce Baskerville, Lynda M. Hayward, K. Stephen Brown, Deborah J. Ossip. *Nicotine & Tobacco Research*, Volume 16, Number 4 (April 2014) 491-495.

How to calculate a reach ratio?



Who is your **target population**?



What is the one year **time period**?



What is the **subgroup(s)** of interest?



DATA SOURCES and CIs

Data sources

Data sources are a key component of reach ratios. Use state specific adult tobacco survey data over BRFSS when available. These repositories can be found by searching online.

Census Bureaus' Annual Population Estimates [2015 or 2016] for 18+

- <http://www.census.gov/data/datasets/2016/demo/popest/nation-detail.html>

Adult Tobacco Study (MN)

- <http://www.mnadulttobaccosurvey.org/>

BRFSS

- https://www.cdc.gov/brfss/data_tools.htm

Other state, local, or population-specific sources

Confidence intervals (CIs)

Campbell et al. and PDA use **Katz Log** method found in the following journal article:

Recommended confidence intervals for two independent binomial proportions.

Morten W Fagerland, Stian Lydersen and Petter Laake. Statistical Methods in Medical Research. 2015 Vol 24(2) 224-254.

In sum...



A reach ratio measures how well a subgroup is represented in quitline services.



Break the reach ratio into small pieces and use the best data source available for each piece. Calculate CI's.



Use reach ratios to inform program and marketing decisions and as a quick reference.