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Community Rounds Workshop Series

Applying Motivation-Phase Interventions to Treat Tobacco Use Among People with Opioid Use Disorder

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Disclosures

There is nothing to disclose for this UVM CORA Community Rounds session.

Potential Conflict of Interest:

All potential conflicts of Interest have been resolved prior to the start of this program.

All recommendations involving clinical medicine made during this talk were based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients.

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Outline

- Tobacco use in rural communities
- Tobacco use & opioid use disorder (OUD)
- Initiating a quit attempt vs quit success
- Treatment for people who are not ready to quit smoking
- Current tobacco treatment effort for people with OUD
- Questions

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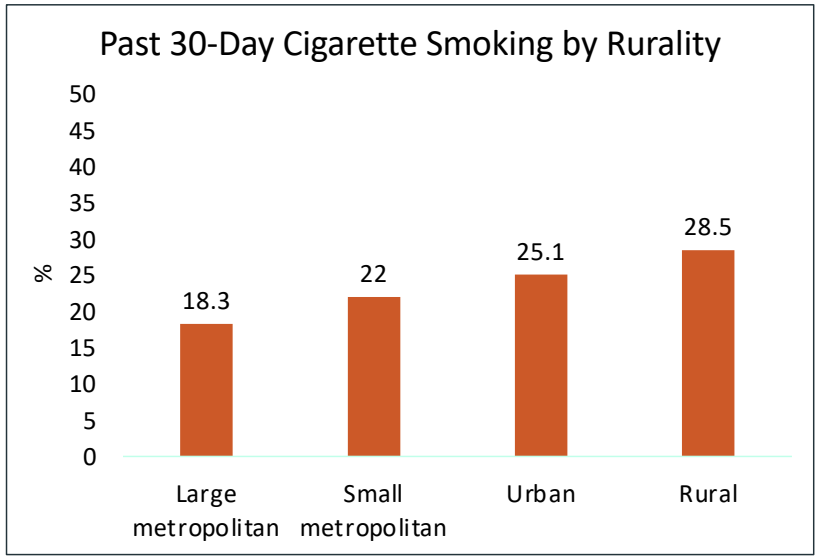
Tobacco Use in Rural States

- The prevalence of cigarette smoking is highest in rural counties
- Rurality is associated with higher smoking-associated cancer and mortality



National Survey on Drug Use and Health, 2016; Villanti et al., 2021

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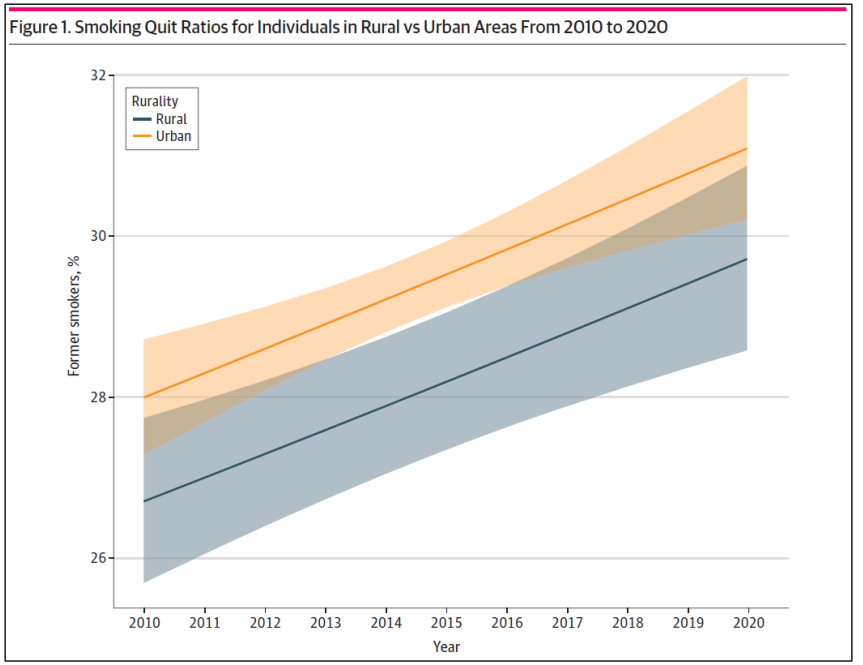
Tobacco Cessation in Rural States

- People in rural communities are less likely to successfully quit
- There is a persistent rural vs urban disparity in quit ratio (former smokers/ever smokers)



Parker et al., 2022

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Recommended paper

JAMA Network | Open

Research Letter | Public Health

Trends in Rural and Urban Cigarette Smoking Quit Ratios in the US From 2010 to 2020

Maria A. Parker, PhD, MPH; Andrea H. Weinberger, PhD; Emma M. Eggers; Erik S. Parker, PhD; Andrea C. Villanti, PhD, MPH

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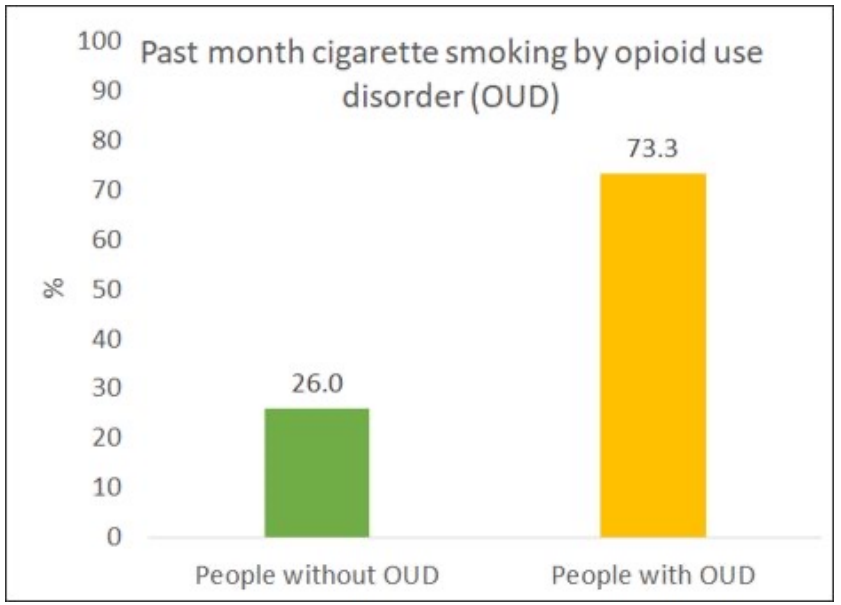
Tobacco & Opioid Use

- People with OUD experience nearly 3-fold higher prevalence of smoking vs those without



Parker et al., 2020; Parker et al., 2018

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Tobacco & Opioid Use

- The high co-occurrence of OUD and smoking is persistent over time

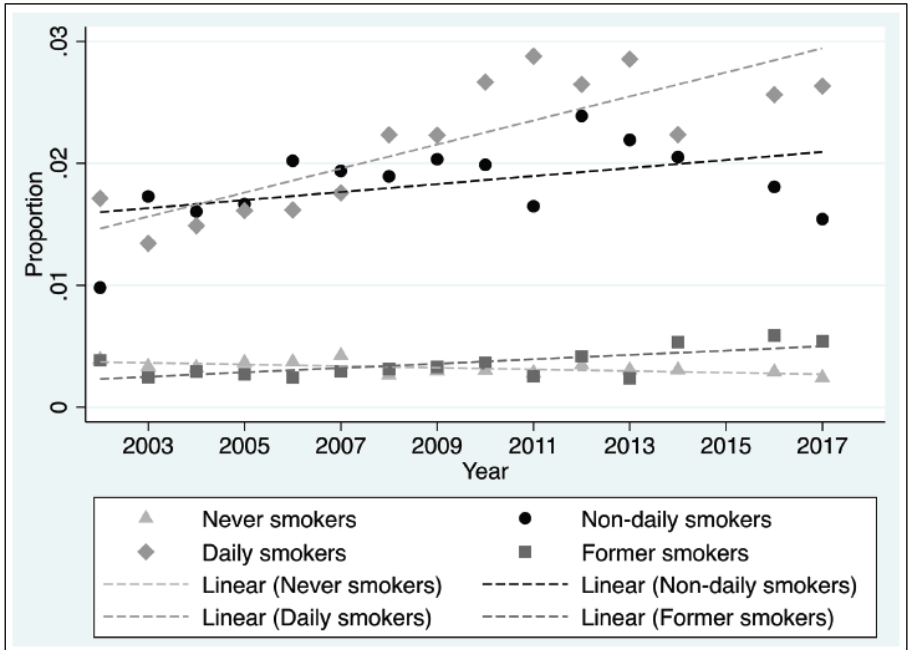

Figure 1. Prevalence of opioid use disorder by cigarette smoking status from 2002 to 2017. Data from the National Surveys on Drug Use and Health.

Parker et al., 2021

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Tobacco & Opioid Use

- Smoking increases cardiovascular disease and is the 2nd leading cause of death for people with OUD
- 4-fold higher mortality rate among people with OUD who smoke vs do not smoke
- Tobacco use is associated with increased likelihood of relapse to other substance use
- Smoking cessation treatment does not disrupt treatment for OUD

Tobacco treatment for people with OUD is crucial

Apollonio, 2016; Hser et al., 2017; Hser et al., 1994; Prochaska et al., 2004; Weinberger et al., 2017

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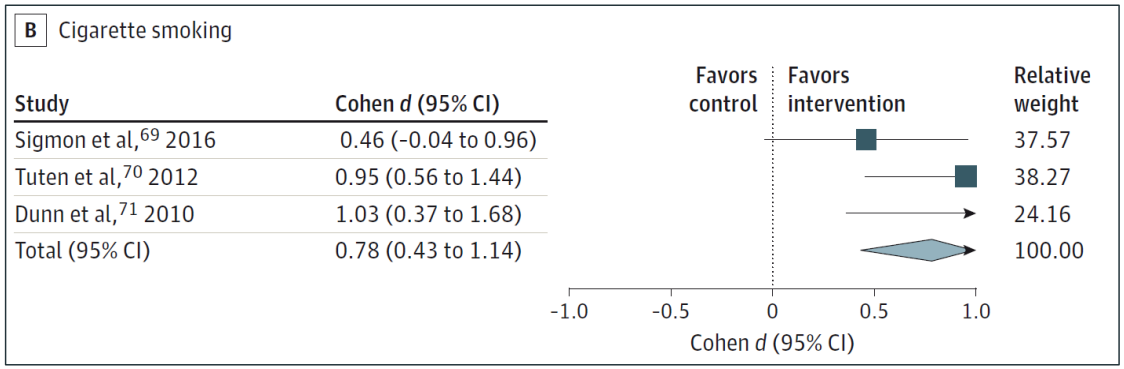
Smoking cessation treatment for people with OUD

- Brief counseling alone is insufficient
- Pharmacotherapy is effective
- Contingency management is effective
  - Medium-large effect
  - Relapse common after discontinuation



Bolivar et al., 2021; Vlad et al., 2020

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Smoking cessation treatment for people with OUD

- Brief counseling alone is insufficient
- Contingency management is effective
  - Implementation is often a barrier
- Pharmacotherapy is effective
  - NRT vs placebo increases smoking cessation by 1.5 to 3.6-fold at a 6-month follow-up

Bolivar et al., 2021; Vlad et al., 2020

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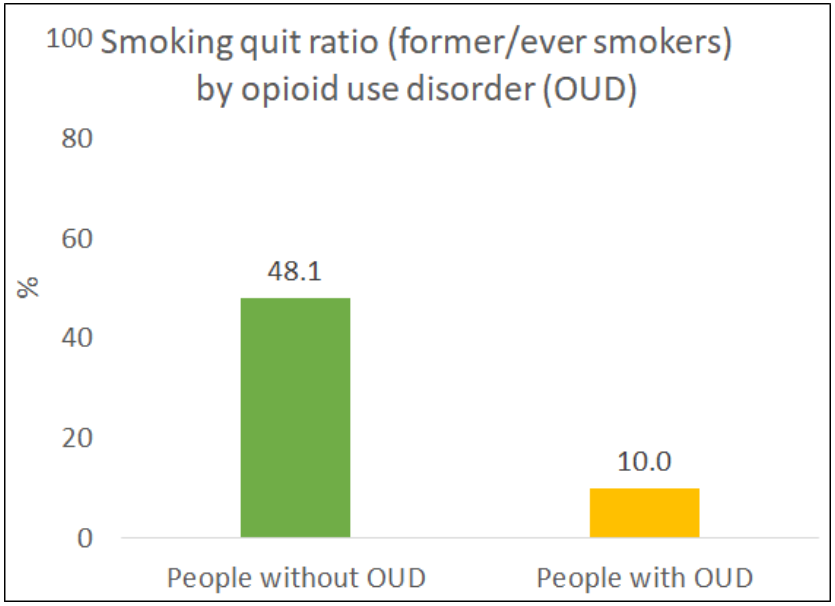
Barriers to smoking cessation among people with OUD

- Smokers with vs without OUD are ~5 times less likely to quit smoking
- Common barriers include:
  - High nicotine dependence
  - Opioid-nicotine interaction may facilitate co-use
  - Co-occurring psychiatric symptoms
  - **Low Tx engagement**



Lichtenstein et al., 2019; Parker et al., 2020; Vlad et al., 2020; Yee et al., 2018

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Recommended review

Review Article | Published: 27 February 2020

Achieving Smoking Cessation Among Persons with Opioid Use Disorder

Cynthia Vlad, Julia H. Arnsten & Shadi Nahvi

CNS Drugs **34**, 367–387 (2020) | Cite this article

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Readiness to Quit Smoking

- Most (>70%) adults who smoke cigarettes are not ready to quit in the near future.
  - Readiness could be due to motivation, self-efficacy, or intention to quit
- Residents of rural communities are less likely to report readiness to quit in the next 6 months than urban residents.
- People with OUD report readiness to quit comparable to the general population of US smokers.

Reid et al., 2019; Vlad et al., 2020; Wewers et al., 2003

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Readiness to Quit Smoking

- Readiness to quit is fluid

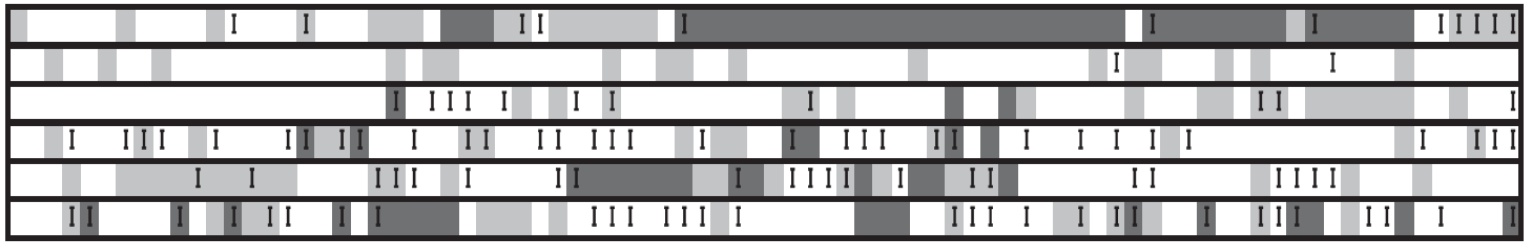

Figure 2. Examples of multiple transitions across intention, smoking, reduction, and abstinence states for six participants. Columns represent days of the study. Rows represent individual participants. Black boxes represent a day of intentional abstinence. Gray boxes represent a day of reduction in cigarettes/day by ≥50%. An I represents a day in which, on the night before, smokers reported they planned not to smoke that day.

Hughes et al., 2013; Hughes et al 2014; Peters & Hughes 2009

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Motivation Phase Interventions

- Tailored to meet the needs of a person who is not currently ready to quit.
- Often focused on initiating a quit attempt
- Few trials have tested tobacco treatment among smokers with OUD who not ready to quit smoking.
  - None have shown effectiveness.

Baker et al., 2011; Hall et al., 2018; Stein et al., 2006

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Initiating a quit attempt

- Predictors of quit attempts ≠ predictors of quit success

Addiction

REVIEW

doi:10.1111/j.1360-0443.2011.03565.x

Predictors of attempts to stop smoking and their success in adult general population samples: a systematic review

Eleni Vangeli[1], John Stapleton[1], Eline Suzanne Smit[2], Ron Borland[3] & Robert West[1]

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Initiating a quit attempt

- Among people not ready to quit?

Nicotine & Tobacco Research, 2020, 1–7
doi:10.1093/ntr/ntaa051
Original Investigation
Received November 27, 2019; Editorial Decision March 12, 2020; Accepted March 18, 2020
Advance Access publication April 01, 2020

SRNT

Original Investigation

Predictors of Smoking Cessation Attempts and Success Following Motivation-Phase Interventions Among People Initially Unwilling to Quit Smoking

Elias M. Klemperer PhD[1], Robin Mermelstein PhD[2], Timothy B. Baker PhD[3], John R. Hughes MD[1], Michael C. Fiore MD, MPH, MBA[3], Megan E. Piper PhD[3], Tanya R. Schlam PhD[3], Douglas E. Jorenby PhD[3], Linda M. Collins PhD[4], Jessica W. Cook PhD[3]

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Initiating a quit attempt vs successful cessation

- 2x2x2x2 factorial trial (N=517)
  - NRT patch
  - NRT gum
  - Reduction counseling
  - Motivational counseling
- Treatment lasted 6 weeks
- Secondary analysis examined predictors of quit attempts and 7-day point prevalence abstinence at 26 weeks

Cook et al., 2016; Klemperer et al., 2020

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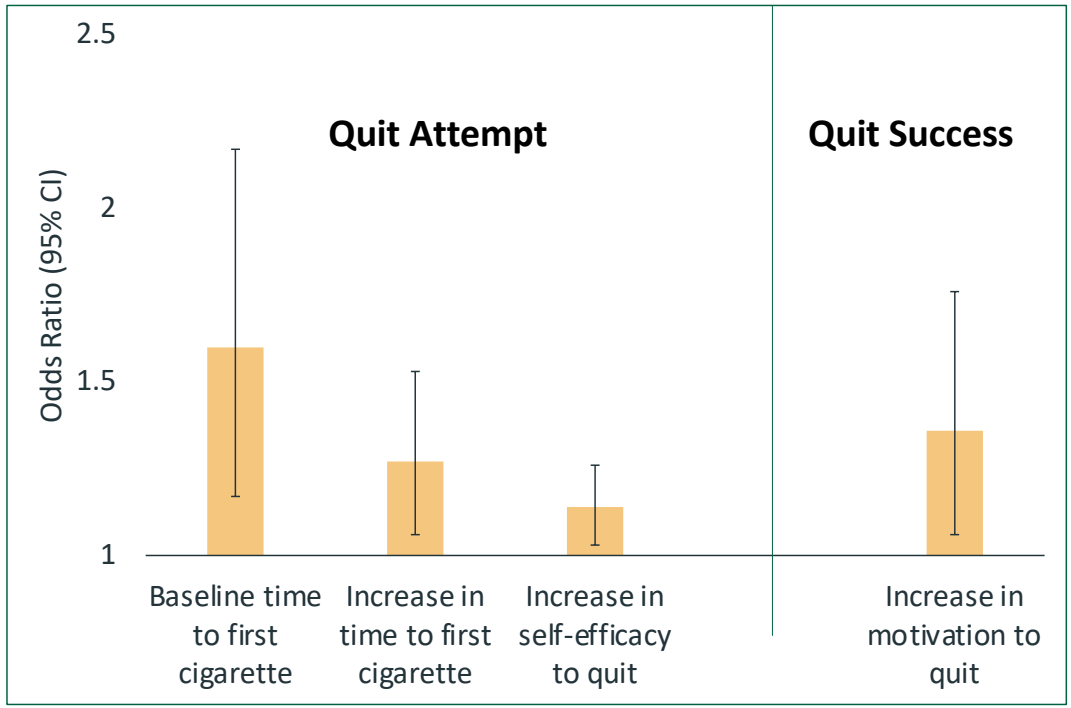
Predictors of quit attempts ≠ predictors of quit success

Table 3. Findings From Multivariable Models That Included All Smoking-Related Constructs as Predictors of Quit Attempts and Success

	Quit attempt OR (95% CI)	Quit success OR (95% CI)
Cigarettes per day		
Baseline	1.0 (0.95, 1.02)	0.99 (0.91, 1.07)
Reduction: baseline to week 6	0.99 (0.95, 1.04)	1.07 (0.97, 1.18)
Time to first cigarette		
Baseline	**1.60 (1.17, 2.17)**	1.07 (0.63, 1.82)
Increase: baseline to week 6	**1.27 (1.06, 1.53)**	0.89 (0.63, 1.25)
Motivation to quit		
Baseline	1.04 (0.93, 1.17)	1.19 (0.91, 1.55)
Increase: baseline to week 6	1.05 (0.95, 1.17)	**1.36 (1.06, 1.76)**
Quitting self-efficacy		
Baseline	1.10 (0.98, 1.26)	1.10 (0.88, 1.37)
Increase: baseline to week 6	**1.14 (1.03, 1.26)**	0.96 (0.80, 1.16)
Anticipated urge to smoke if quit		
Baseline	0.98 (0.87, 1.11)	0.87 (0.70, 1.10)
Reduction: baseline to week 6	0.97 (0.87, 1.08)	1.15 (0.93, 1.43)
Positive affect		
Baseline	1.10 (0.97, 1.25)	0.98 (0.76, 1.26)
Increase: baseline to week 6	1.07 (0.95, 1.20)	0.92 (0.73, 1.15)
Negative affect		
Baseline	1.04 (0.93, 1.17)	0.97 (0.78, 1.22)
Reduction: baseline to week 6	0.96 (0.87, 1.06)	0.97 (0.81, 1.17)
Time spent around others who smoke		
Baseline	1.05 (0.83, 1.34)	1.42 (0.90, 2.24)
Reduction: baseline to week 6	0.86 (0.67, 1.09)	1.48 (0.97, 2.25)



Klemperer et al., 2020

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Initiating a Quit Attempt is the First Step

AMERICAN PSYCHOLOGICAL ASSOCIATION

Experimental and Clinical Psychopharmacology

ISSN: 1064-1297

https://doi.org/10.1037/pha0000583

A Systematic Review and Meta-Analysis of Interventions to Induce Attempts to Quit Tobacco Among Adults Not Ready to Quit

Elias M. Klemperer[1, 2], Joanna M. Streck[3], Nicola Lindson[4], Julia C. West[1, 2], Alan Su[5], John R. Hughes[1, 2], and Matthew J. Carpenter[6]

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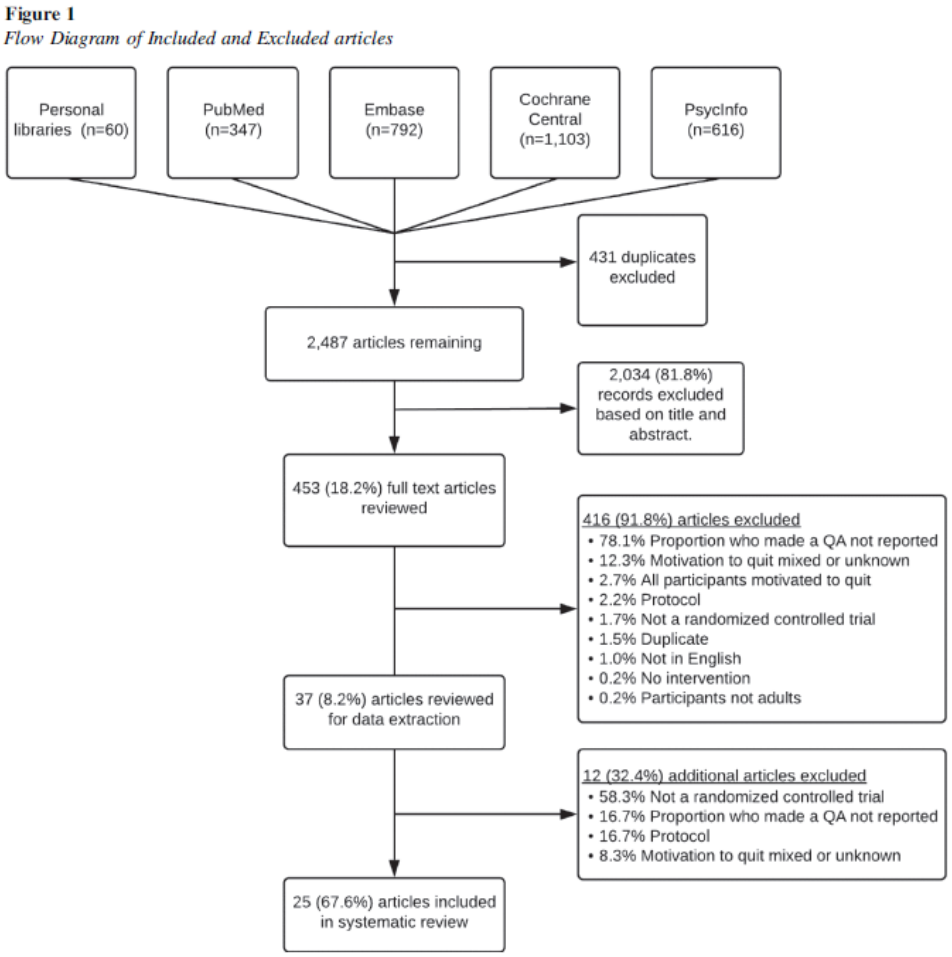
Literature Review

- N=25 trials included in the systematic review



Klemperer et al., 2022

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Meta-analysis

- High heterogeneity resulted in a series of small meta-analyses:
  1. Motivational counseling (n=8)
  2. Reduction counseling (n=5)
  3. Combined Motivational + Reduction counseling (n=2)
  4. NRT alone (n=6)
  5. NRT with Reduction counseling (n=4)
  6. NRT with Motivational counseling (n=2)
  7. NRT with Motivational + Reduction counseling (n=3)
  8. Varenicline (n=3)
  9. Very Low Nicotine Content (VLNC) cigarettes (n=4)

Klemperer et al., 2022

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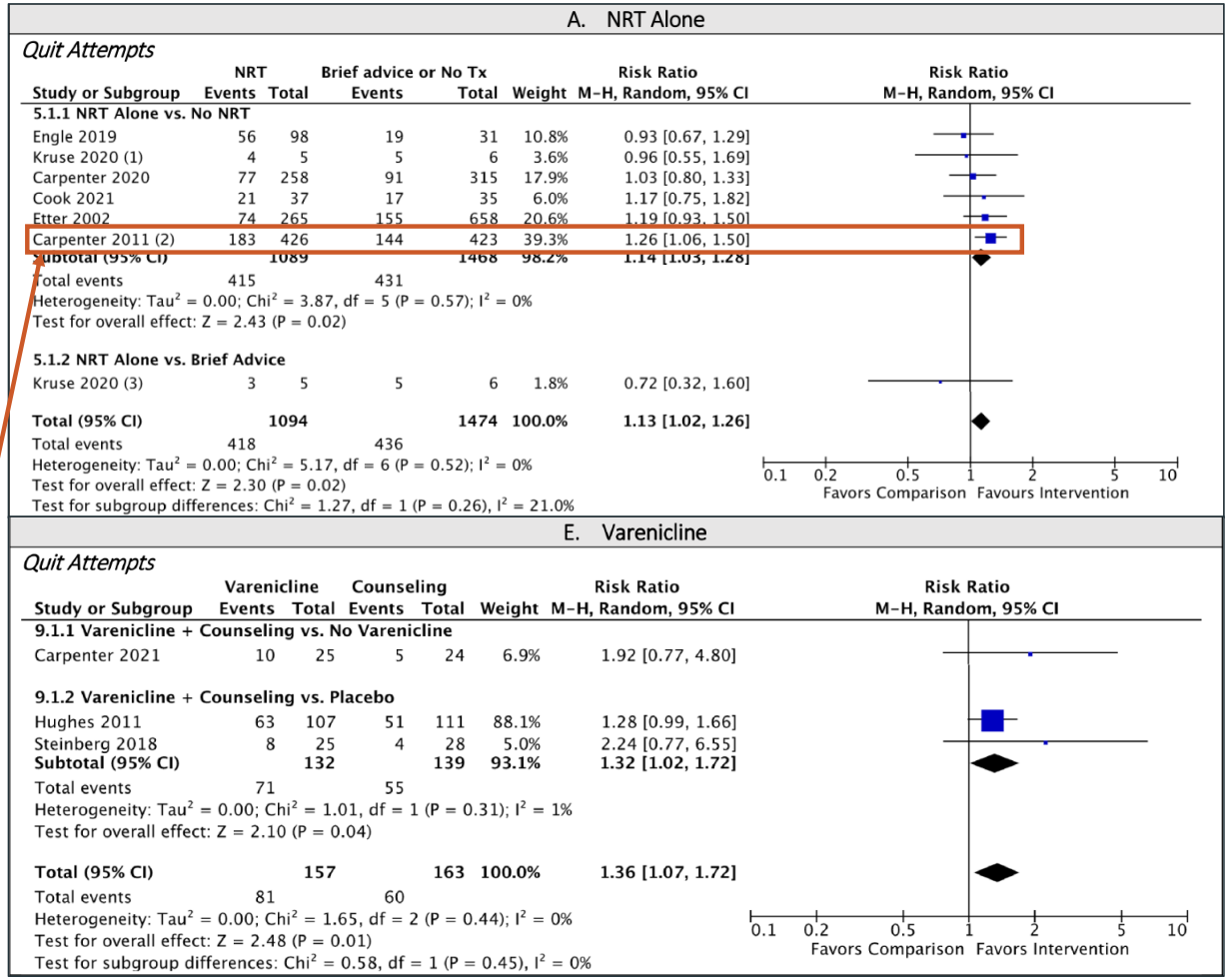
Results

- NRT and Varenicline were the only two effective interventions
- Low certainty in pooled effects
- I will come back to this



Klemperer et al., 2022

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What about counseling?

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The USPHS Recommended 5Rs Motivational Intervention

- **R**elevance
  - **O**pen ended questions
  - **A**ffirmations
  - **R**eflective listening
  - **S**ummary reflections
- **R**isks from smoking
  - Short-term and long-term
  - Support “change talk”
- **R**ewards from quitting
  - Common examples: health, money, children
- **R**oadblocks to quitting
  - Express accurate empathy
  - Engage in problem solving & advice to quit
- **R**epetition

Fiore et al., 2008

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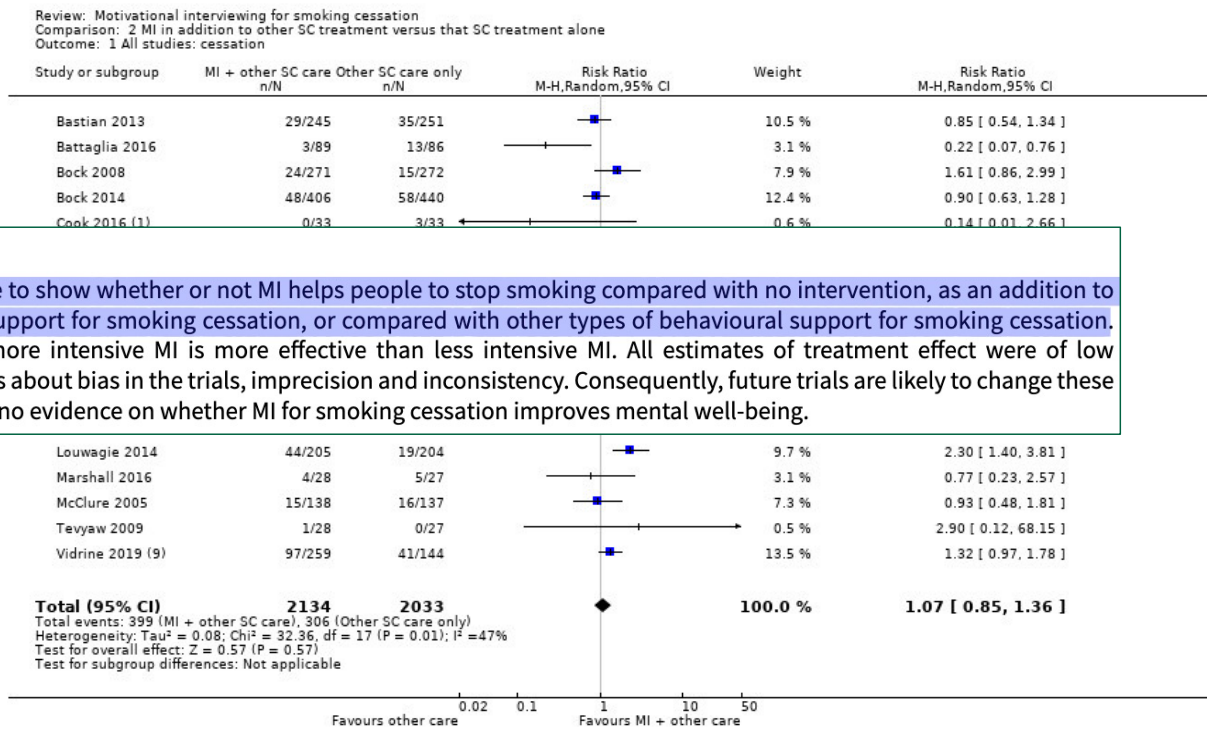
Cochrane Review on Motivational Interviewing



Authors' conclusions

There is insufficient evidence to show whether or not MI helps people to stop smoking compared with no intervention, as an addition to other types of behavioural support for smoking cessation, or compared with other types of behavioural support for smoking cessation. It is also unclear whether more intensive MI is more effective than less intensive MI. All estimates of treatment effect were of low certainty because of concerns about bias in the trials, imprecision and inconsistency. Consequently, future trials are likely to change these conclusions. There is almost no evidence on whether MI for smoking cessation improves mental well-being.

Lindson N, Thompson TP, Ferrey A, Lambert JD, Aveyard P. Motivational interviewing for smoking cessation. Cochrane Database of Systematic Reviews. 2019(7).

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Research on the 5Rs among smokers not ready to quit

Trial	Comparison	Cessation
Carpenter 2004	No treatment	✓
Catley 2016	Brief advice	✓
Klemperer 2017	Brief advice	✓

OR=2.2 to 6.3

Carpenter et al., 2004; Catley et al., 2016; Klemperer et al., 2017

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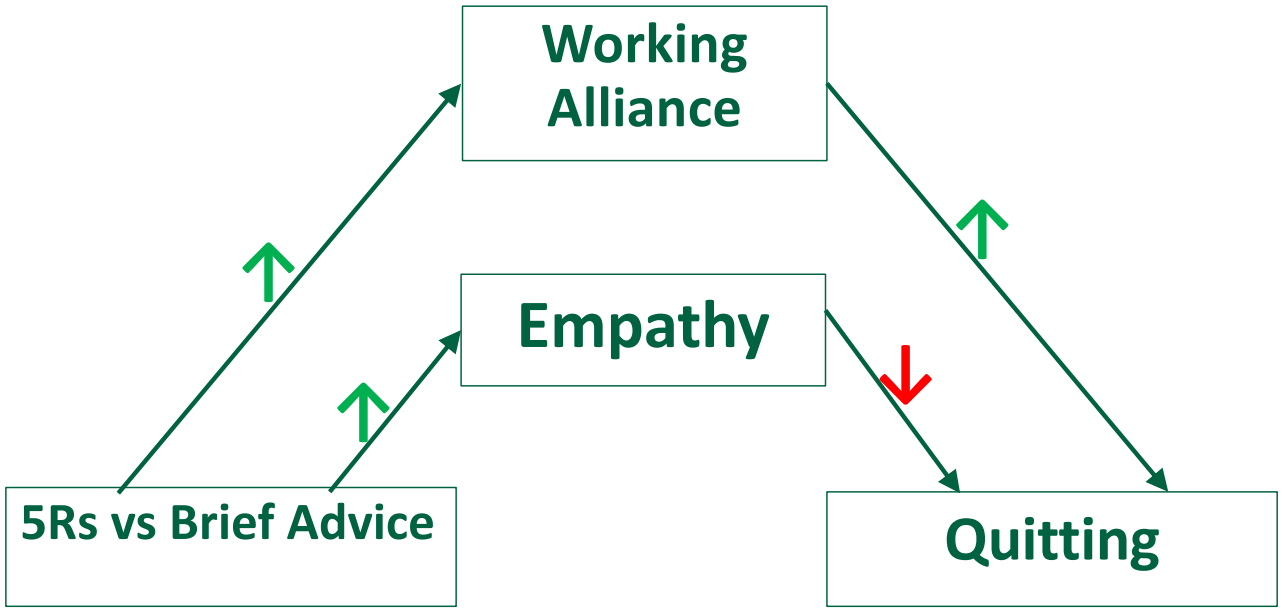
5Rs "Active Ingredients"



Klemperer et al., 2017

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Cutting Down to Quit

- Timed Reduction:
  - Collaboratively create a smoking schedule by dividing # of cigarettes by # of waking hours
  - Gradually increase time between cigarettes
- Hierarchical Reduction:
  - Collaboratively create a hierarchy of easiest to most difficult cigarettes to give up in a typical day
  - Gradually reduce, beginning with the easiest

Cincirpini et al., 1995

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Considerations: Cutting Down to Quit

- There is no standard reduction protocol
- Magnitude of reduction?
- Duration of reduction?
- Goal must be abstinence
  - Reduction in cigarettes often ≠ harm reduction
  - Reduction is not a substitute for quitting

Hughes & Carpenter, 2006; Chang et al., 2021

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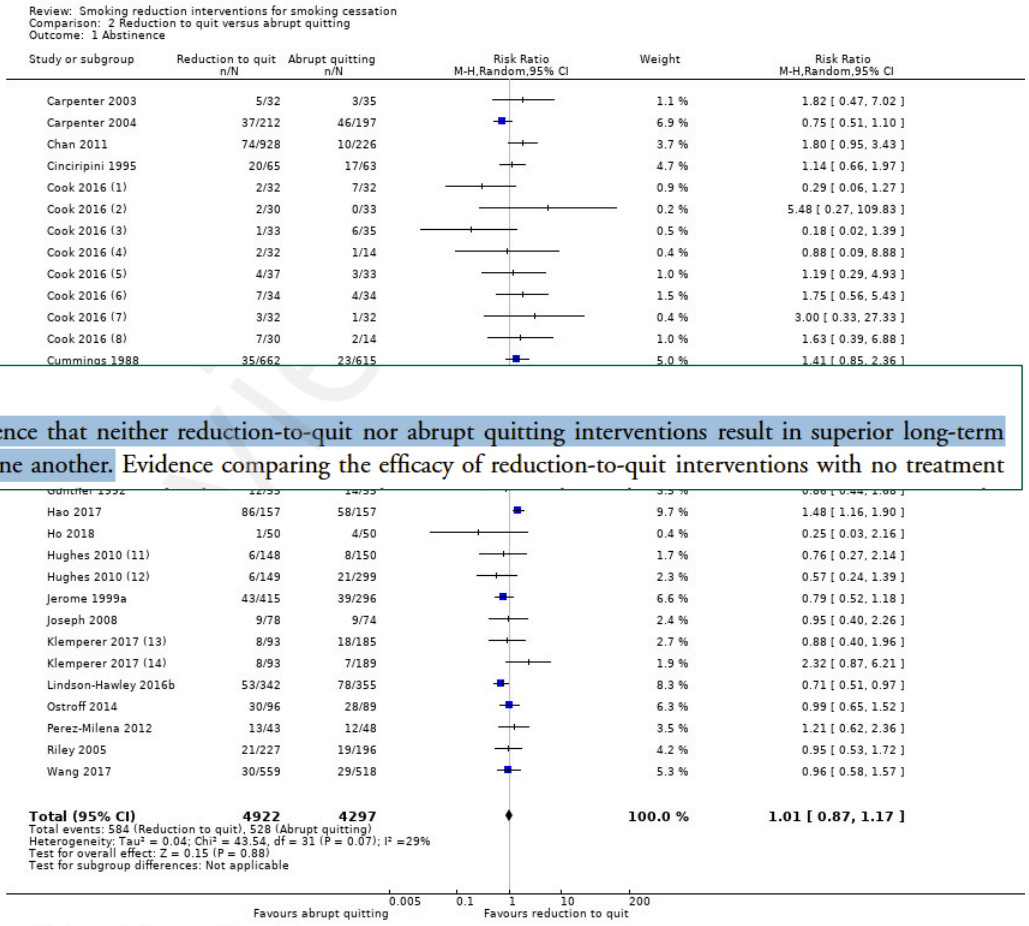
Cochrane Review on Cutting Down to Quit



Authors' conclusions

There is moderate-certainty evidence that neither reduction-to-quit nor abrupt quitting interventions result in superior long-term quit rates when compared with one another. Evidence comparing the efficacy of reduction-to-quit interventions with no treatment

Lindson N, Klemperer E, Hong B, Ordóñez-Mena JM, Aveyard P. Smoking reduction interventions for smoking cessation. Cochrane Database of Systematic Reviews. 2019(9).

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Cigarette Reduction

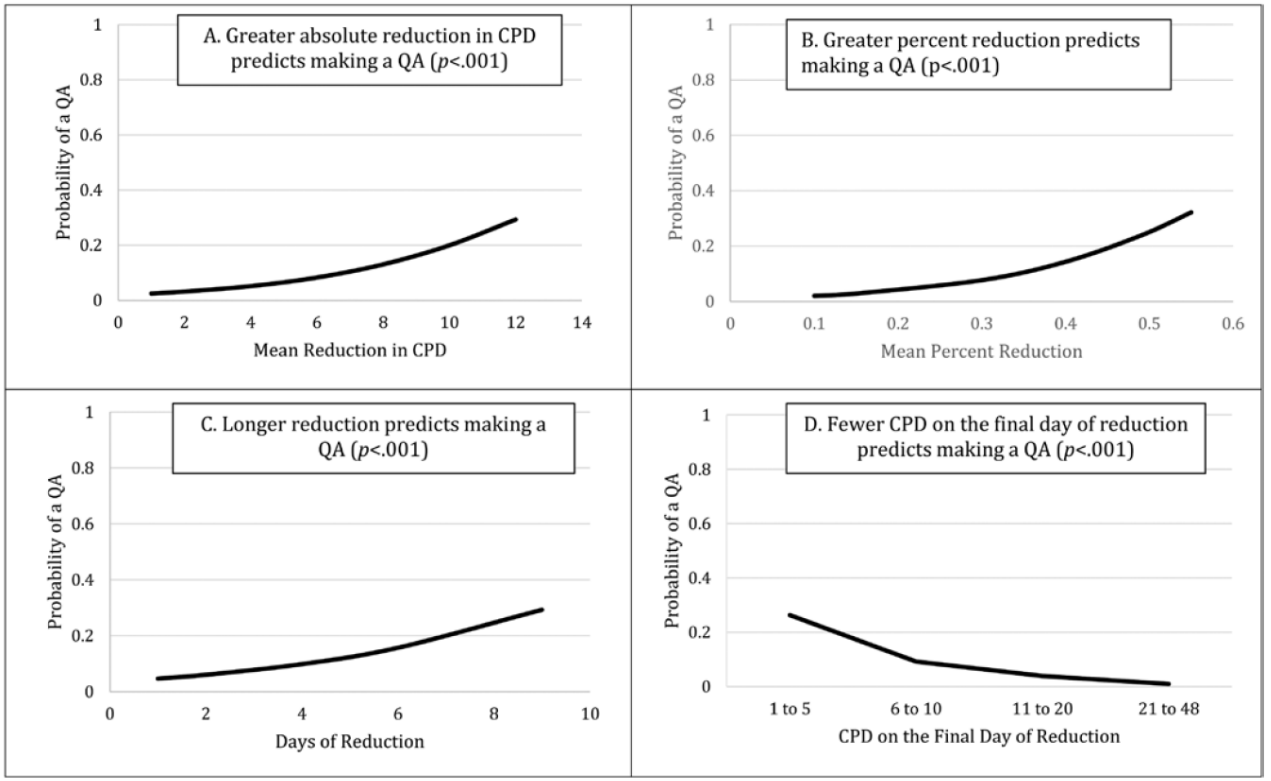

Figure 2. Reduction episodes without the intention to quit predict making a QA on the day after an episode in a dose-related manner. CPD = cigarettes per day; QA = quit attempt.

Klemperer et al., 2018

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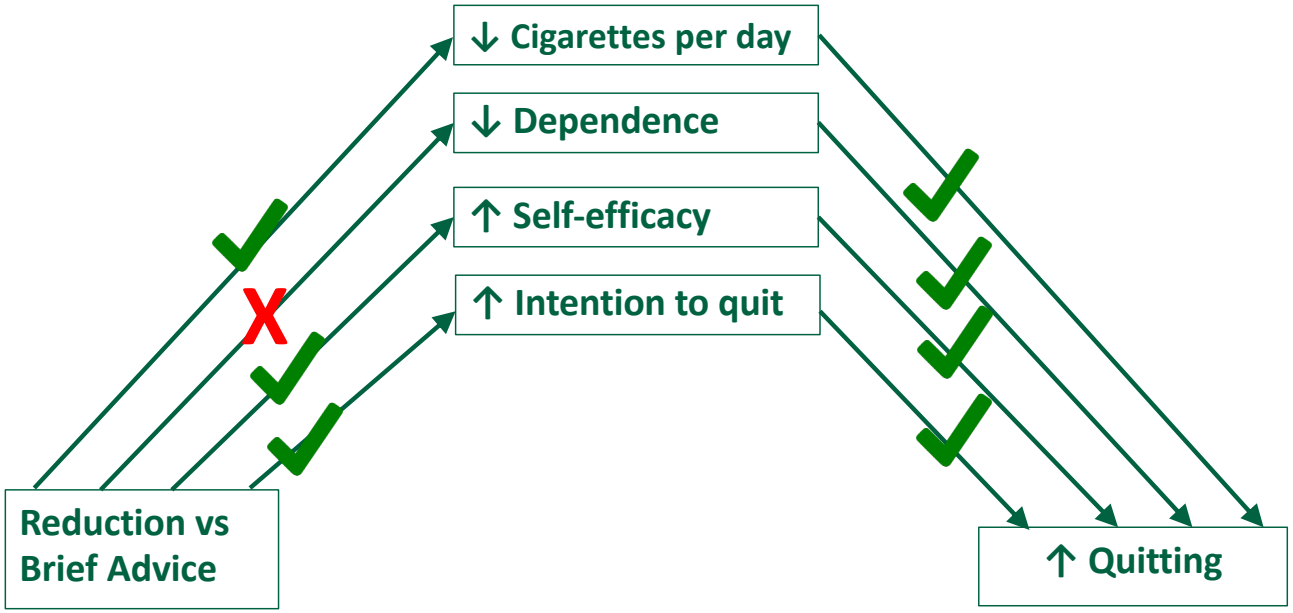
Cutting Down to Quit "Active Ingredients"



Klemperer et al., 2017

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Where to start?

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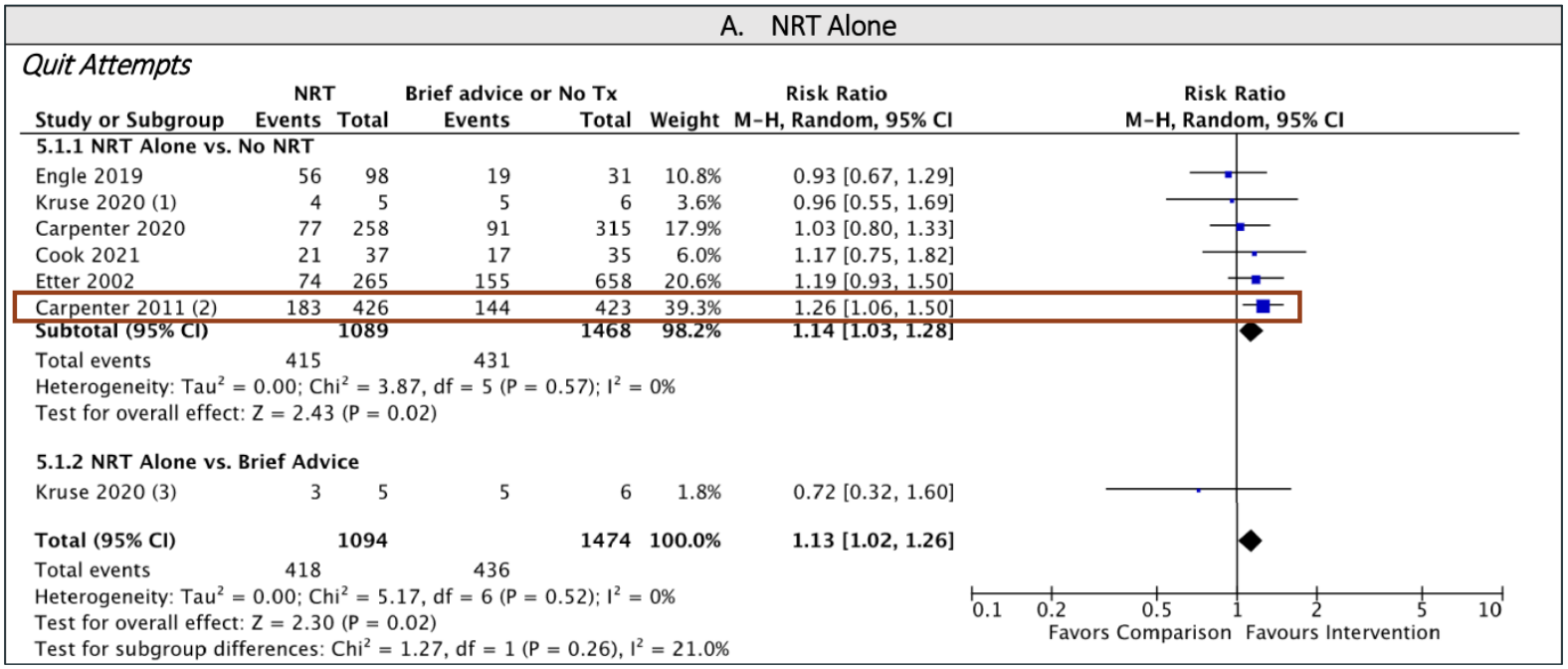
Meta-analysis Results



Klemperer et al., 2022

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Nicotine Replacement Therapy (NRT) Sampling

- NRT sampling = Providing a brief supply of NRT to all smokers, **regardless of motivation or intention to quit.**

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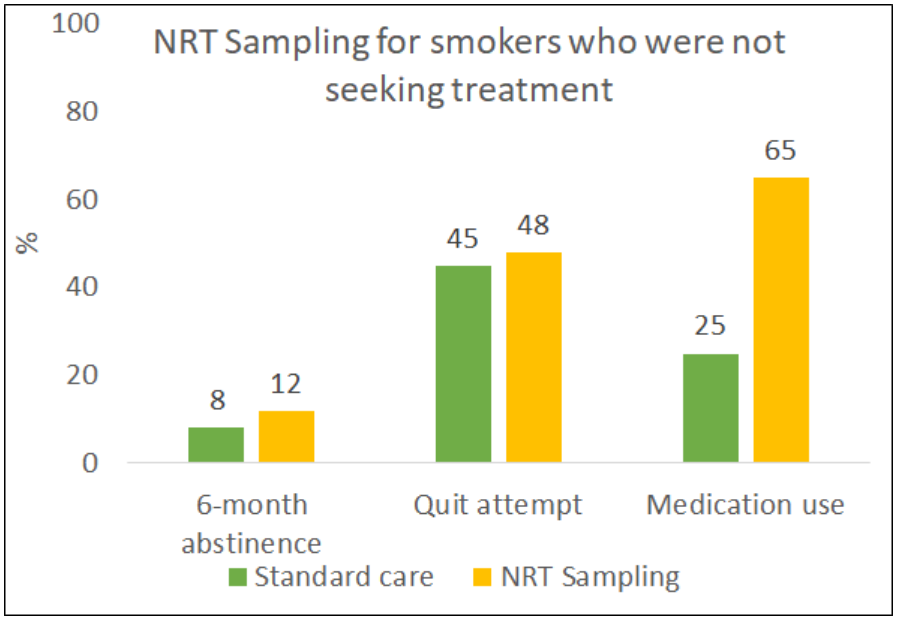
Nicotine Replacement Therapy (NRT) Sampling

NRT sampling

- Increases treatment engagement
- Increases quit attempts among smokers who did not plan to quit
- Increases cessation



Carpenter et al., 2011; Carpenter et al., 2020; Dahne et al., 2018

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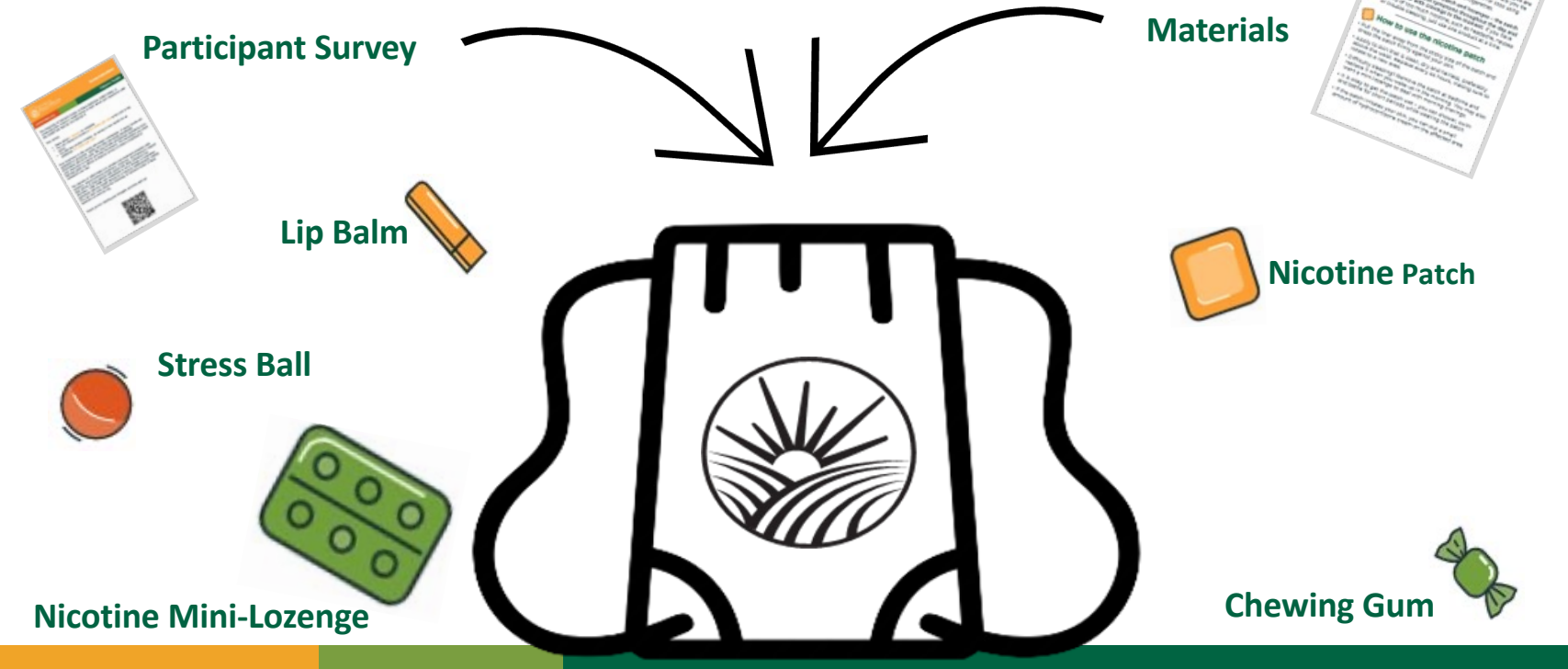
What's in the Tobacco Toolkit?



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NRT Best Practices

- Encourage use of dual NRT (patch + gum or lozenges)
- Encourage pre-cessation NRT
- Continue NRT during a smoking lapse

Lindson et al., 2019; Shiffman & Ferguson 2008

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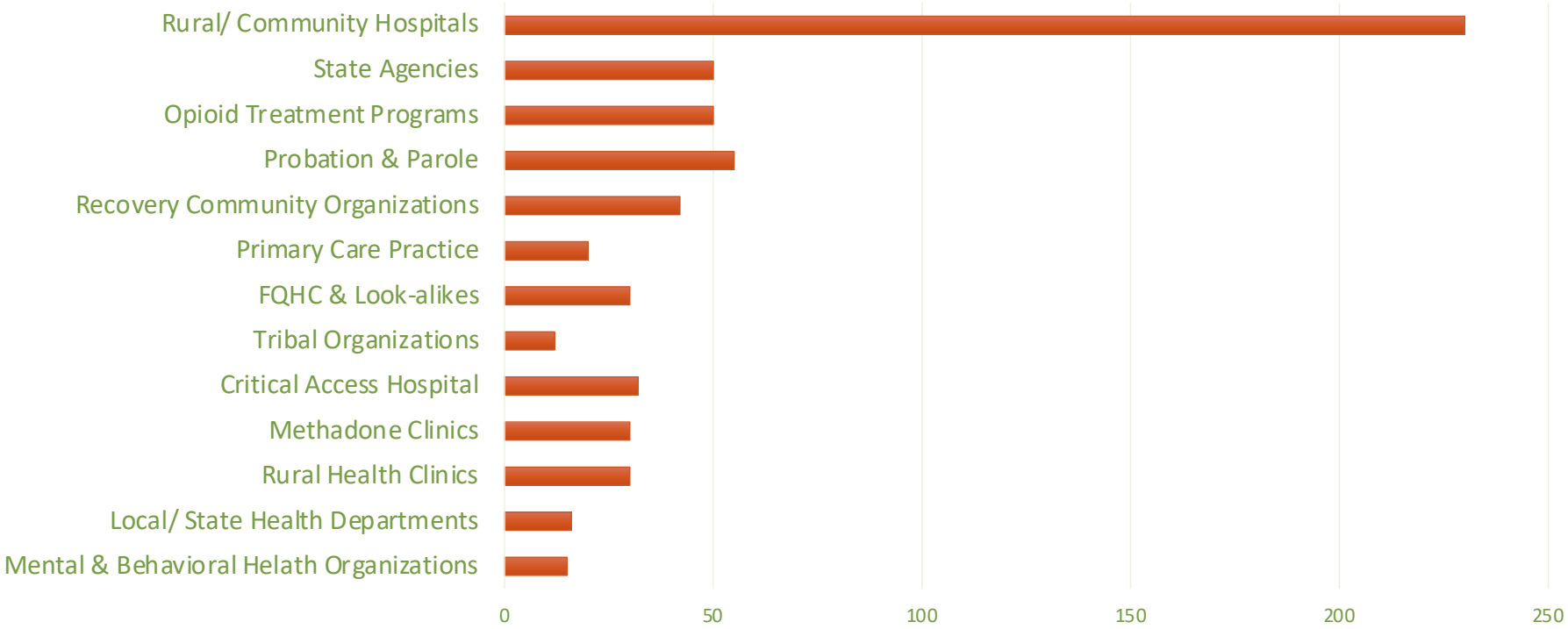
Tobacco Toolkits: Organizations Receiving Them

Total Toolkits Distributed: 612



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Providers Who Requested Tobacco Toolkits

- Nurse Practitioners
- Certified Substance Use Counselors
- Recovery Coaches
- Community Health Educators
- Registered Nurses
- Program Managers
- Masters Level Clinicians
- Medical Doctors

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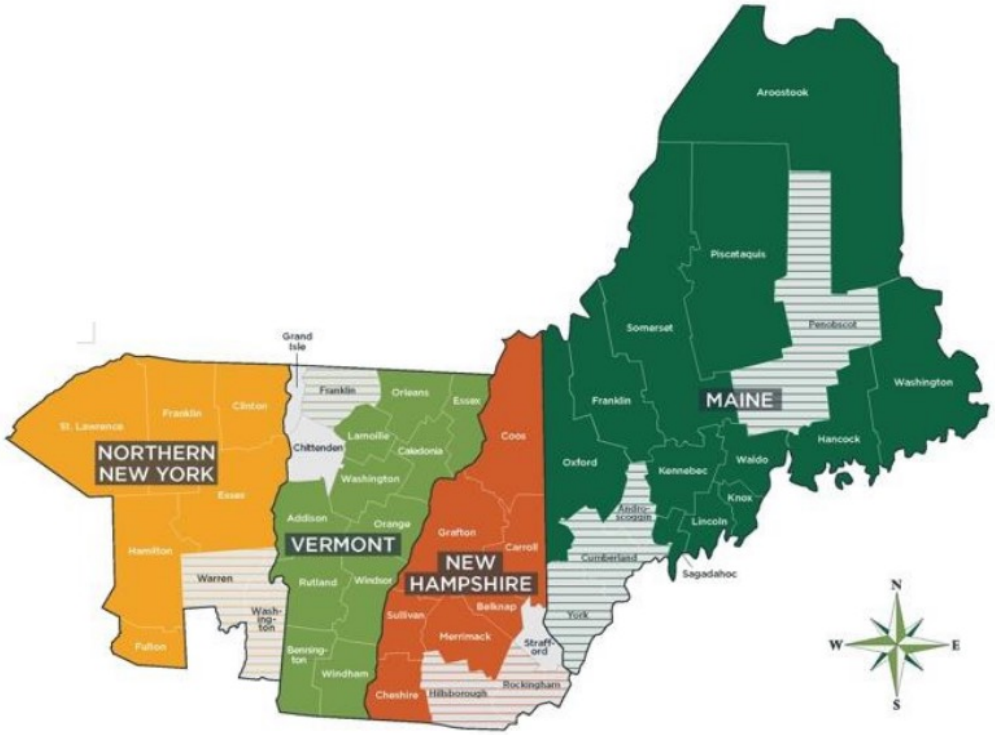
Who is Eligible for the Tobacco Toolkits?

- Live in rural or partially rural county
- Prescribed medications for opioid use disorder
- No NRT contraindications



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Questions?

Elias.Klemperer@med.uvm.edu

To request Tobacco Treatment Toolkits, contact:
cora.bp@uvm.edu

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