



Utilizing social media for colorectal
cancer screening: An innovative
cluster randomized controlled trial
protocol

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Overview

Background

Objective

Design & Methods

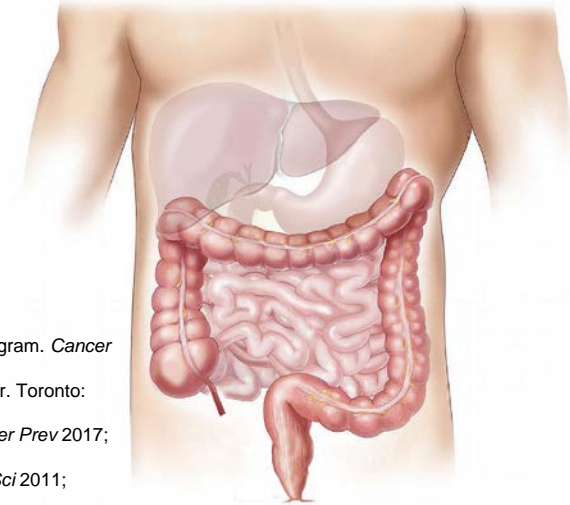
Discussion

Feedback



Background

- Colorectal cancer (CRC) accounts for 13% of all cancers in Canada¹
- Screening participation remains low despite availability of programmatic screening²⁻³
- Interventions to ↑ screening uptake are expensive, challenging to implement and have limited impact⁴⁻⁵



1. Canadian Cancer Statistics Advisory Committee. *Canadian Cancer Statistics 2018*. Toronto, ON: Canadian Cancer Society; 2018. Available at:

<http://www.cancer.ca/Canadian-Cancer-Statistics-2018-EN>.

2. Rabeneck L, Timmouth JM, Paszat LF et al. Ontario's ColonCancerCheck: Results from Canada's first province-wide colorectal cancer screening program. *Cancer Epidemiol Biomarkers Prev* 2014; 23(3): 508-15.

3. Canadian Partnership Against Cancer. *Cancer Screening in Canada: An overview of screening participation for breast, cervical, and colorectal cancer*. Toronto: Canadian Partnership Against Cancer; January 2015.

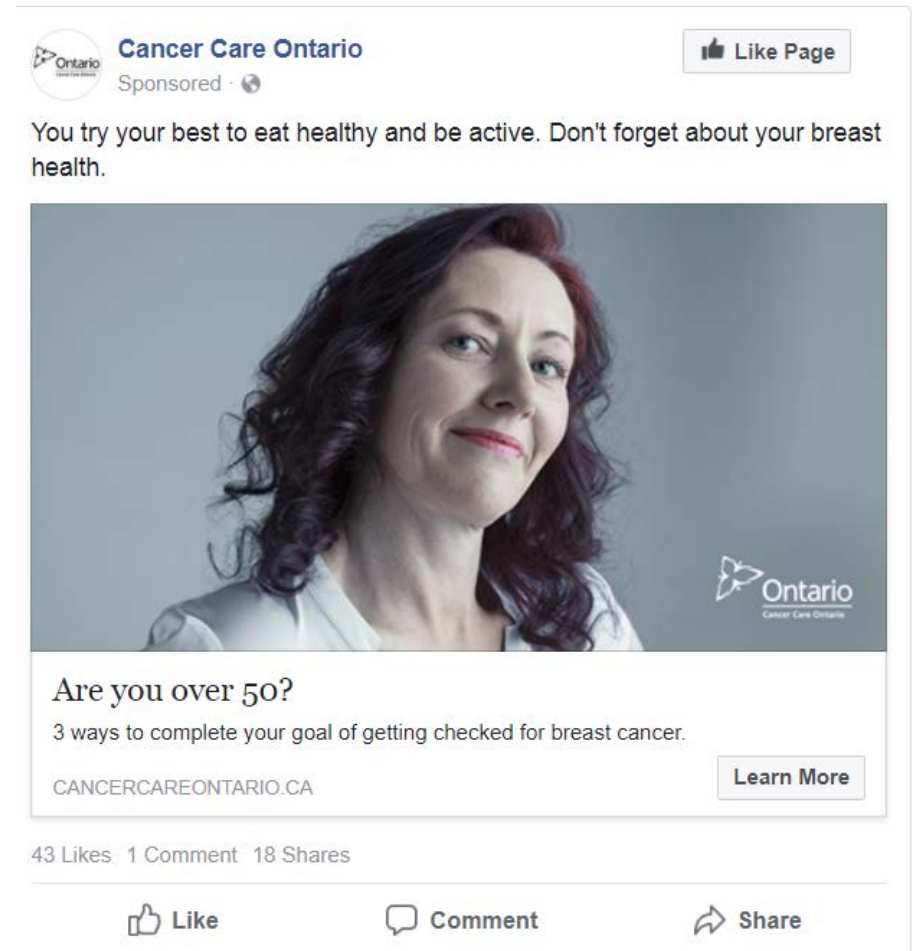
4. Rat C, Latour C, Rousseau R, et al. Interventions to increase uptake of faecal tests for colorectal cancer screening: A systematic review. *Eur J Cancer Prev* 2017; doi: 10.1097/CEJ.0000000000000344.



5. Brouwers MC, De Vito C, Bahirathan L, et al. What implementation interventions increase cancer screening rates? A systematic review. *Implement Sci* 2011; 6:111.




Background


- Social media has the potential to be an innovative strategy for screening promotion
- Opportunity to explore use of social media for CRC screening



 **Cancer Care Ontario** Like Page
Sponsored · 




You try your best to eat healthy and be active. Don't forget about your breast health.





Are you over 50?
3 ways to complete your goal of getting checked for breast cancer.
CANCERCAREONTARIO.CA Learn More

43 Likes · 1 Comment · 18 Shares

 Like  Comment  Share

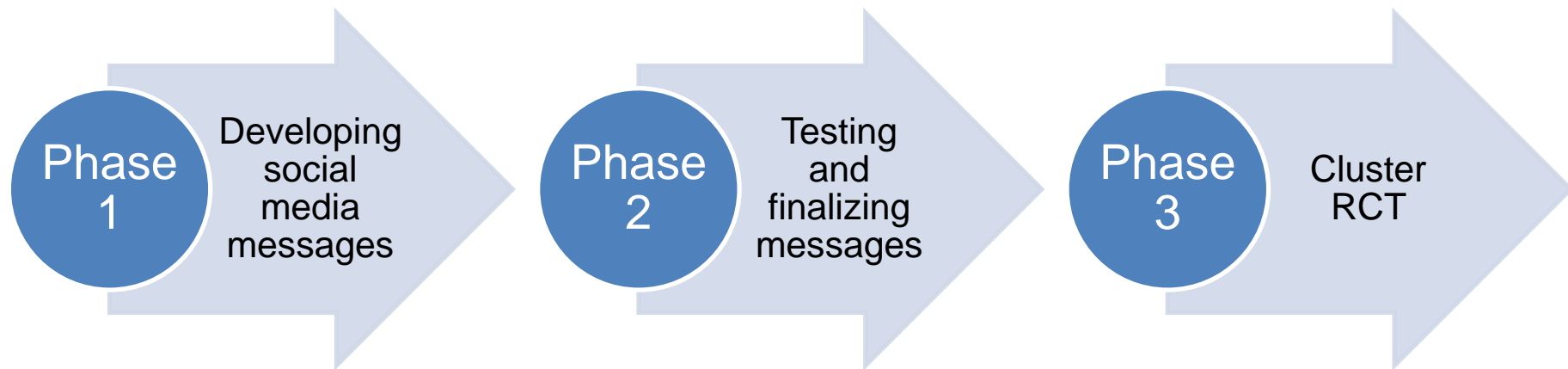


Objective

- The objective of the study is to determine whether social media messages can be used to increase CRC screening uptake

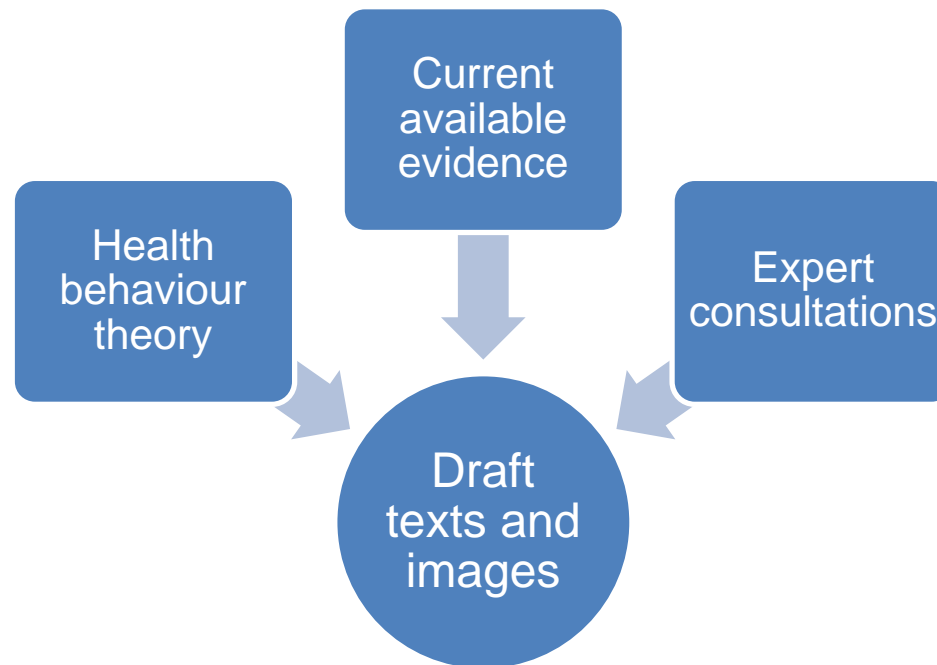


Design & Methods



Design & Methods: Phase 1

- Draft preliminary texts and photos
- Focus on aesthetic qualities – tone, framing, vividness, emotion and source of message

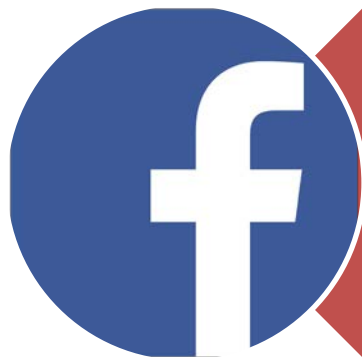


Design & Methods: Phase 2

- Testing preliminary messages



Focus group
testing



Facebook
split testing



Design & Methods: Phase 2

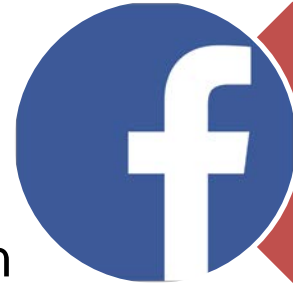


Focus
group
testing

- Inclusion criteria:
 - Screen-eligible age (50-74)
 - Current Facebook users
 - Reside in Ontario
 - Can understand and communicate in English
- Range of demographics to ensure representative sample
- Trained facilitator to lead the discussion and gather feedback on how motivating and compelling they find each text/photo
- Participants to be remunerated for their time



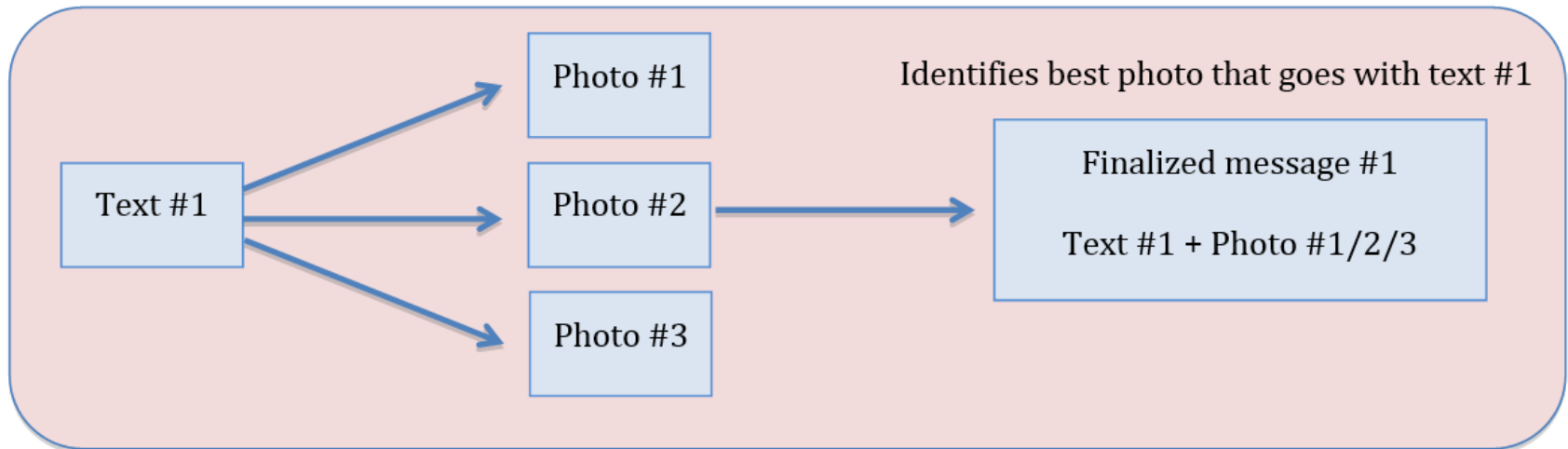
Design & Methods: Phase 2



Facebook
split
testing

- Determine best text/photo combination

Split test #1



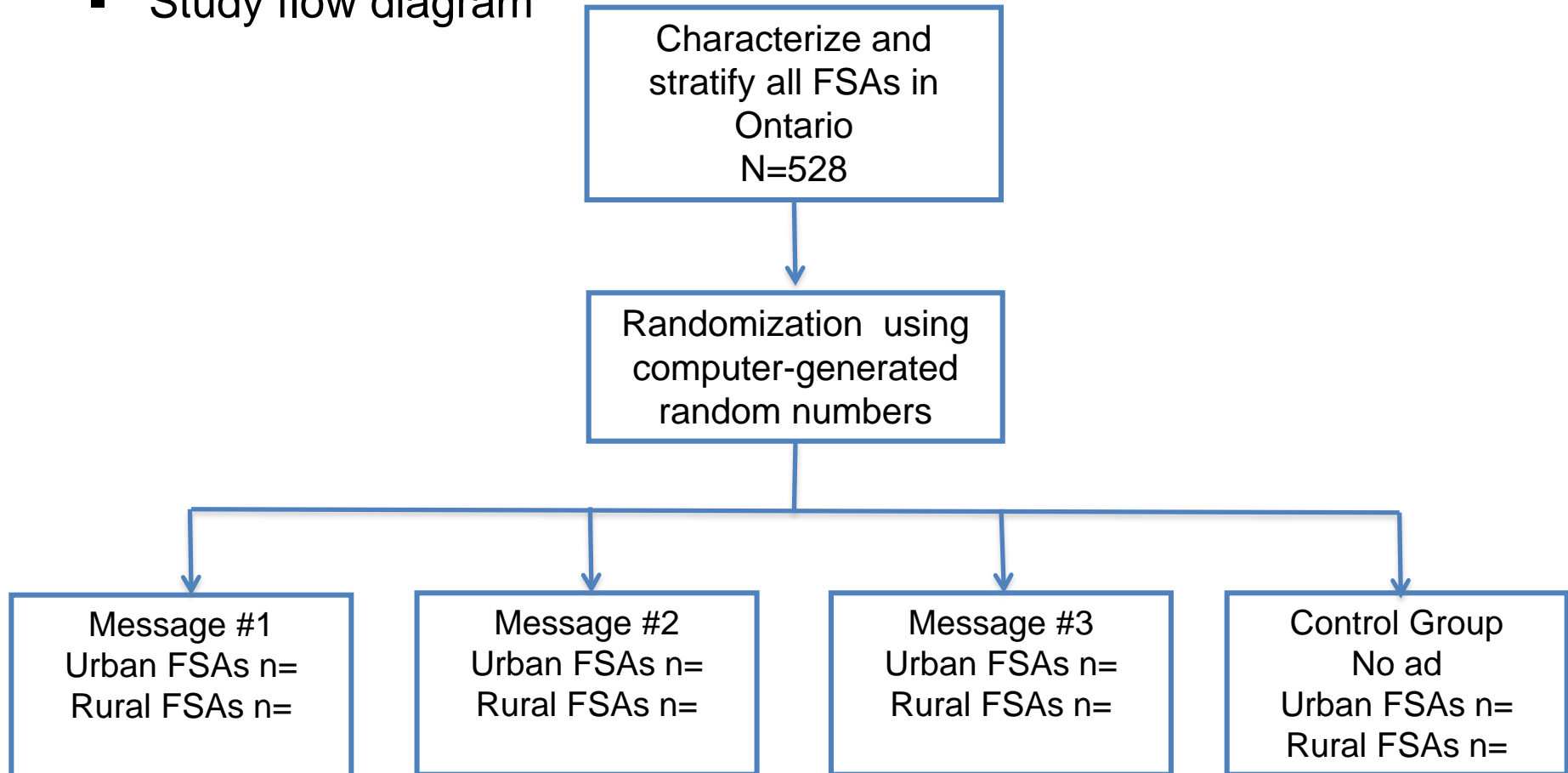
Design & Methods: Phase 3

- Pragmatic cluster RCT on Facebook in Ontario, Canada
- Ad campaign targeting Facebook users:
 - 50 to 74 years of age
 - Residing in Ontario
- Randomization at the level of the Forward Sortation Area (FSA)
- Stratified randomization (urban/rural) using computer-generated random numbers



Design & Methods: Phase 3

- Study flow diagram



Design & Methods: Phase 3

- Campaign to be launched at the same time across all arms for a period of 3 months
- Individuals in intervention arms will be shown the messages
- Those who click on the ad will be sent to a webpage with further information on CRC screening
 - Users will be asked to indicate their intention to get screened for CRC on this site



Design & Methods: Outcome measures

- **Screening participation**
 - *Overall screening (any test)*
 - *Programmatic screening (stool-based testing)*
 - Tracked through admin databases at CCO
- **Engagement metrics**
 - *Click-through rates*
 - *Screening intention*
 - *Reach*
 - *Likes*
 - *Posts*
 - *Comments*
 - Tracked through webpage analytics and Facebook Ads Manager



Design & Methods: Phase 3

- Effect size and power calculations
 - Assumptions
 - Avg. population of each FSA = 25, 714
 - 30% of screen-eligible age (50-74)
 - 70% of individuals use Facebook

 - Avg. size of cluster = 5,400
 - Intraclass correlation coefficient (ICC) = 0.1
- Given limited number of FSAs (528), we would have 80% power to detect a difference of 5.5% between intervention and control arms



Design & Methods: Statistical Analysis

- Baseline descriptive characteristics per trial arm
 - # FSAs, # Facebook users, proportion up to date with screening
- Measure standardized differences in baseline characteristics and adjust for those with a SD of > 0.1
- Generalized Linear Model (GLM) with binomial distribution and Poisson loglinear model with GEE to account for clustering
- Difference in differences approach for screening rates
- Summarize engagement metrics in counts and proportions



Discussion

- Strengths
 - Innovative methodology
 - Feasibility of using social media for CRC screening uptake
 - Contain intervention costs
 - Easily translatable to other jurisdictions, cancer disease sites or other social media platforms
 - Well-rounded research team
- Challenges
 - Contamination
 - Only able to compare engagement metrics for intervention arms
 - Competing social media campaigns
 - Tight timelines



Feedback & Questions?



Supplementary Information



Design & Methods: Phase 2

- Demographic information collected:
 - Age
 - Sex
 - Ethnicity
 - Highest level of education
 - Current employment status
 - First 3 digits of postal code
 - Annual household income
 - Previous screening history
 - Facebook use and how often



Focus
group
testing



Design & Methods: Phase 2



Focus group testing

- Sample focus group questions:
 - What do you think about this text?
 - What do you like or dislike about it? Please be as specific as possible.
 - Do you find this motivating enough to click on the ad if it were to show up on your screen? Why or why not?
 - What emotions or actions do the words appeal to when you read this?
- Sample focus group probes:
 - Do you like the tone of this message? (light, heavy, humorous, ironic, dramatic tone)
 - Do you like the fact that this message is conveying a gain or loss frame (benefit or consequence of action)?
 - Can you resonate with the subject matter in this photo? Why or why not?

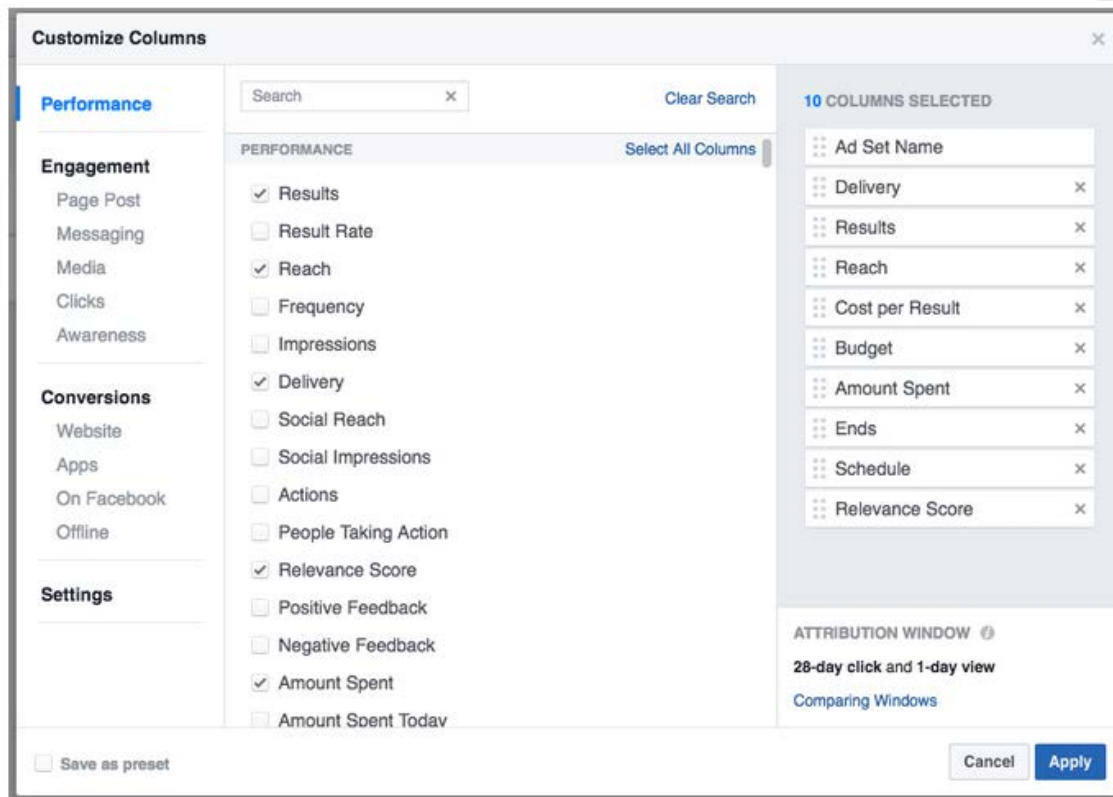


Design & Methods: Phase 2

- Facebook Ads Manager

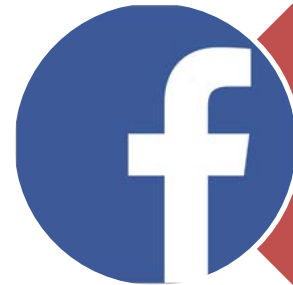


Facebook
split
testing



Design & Methods: Phase 2

- Facebook Ads Manager



Facebook
split
testing

