Goal Attainment in C4P

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CCP & C4P

- Trade-off between specialization (Hospitalist) and continuity of care
- Comprehensive Care Program (CCP), Comprehensive Care, Community and Culture Program (C4P)
  - Recruits only high risk patients identified by machine learning algorithms
  - Have the same primary care physician care for both inpatient hospitalization and in outpatient clinics
  - C4P has additional community programs targeted at unmet needs

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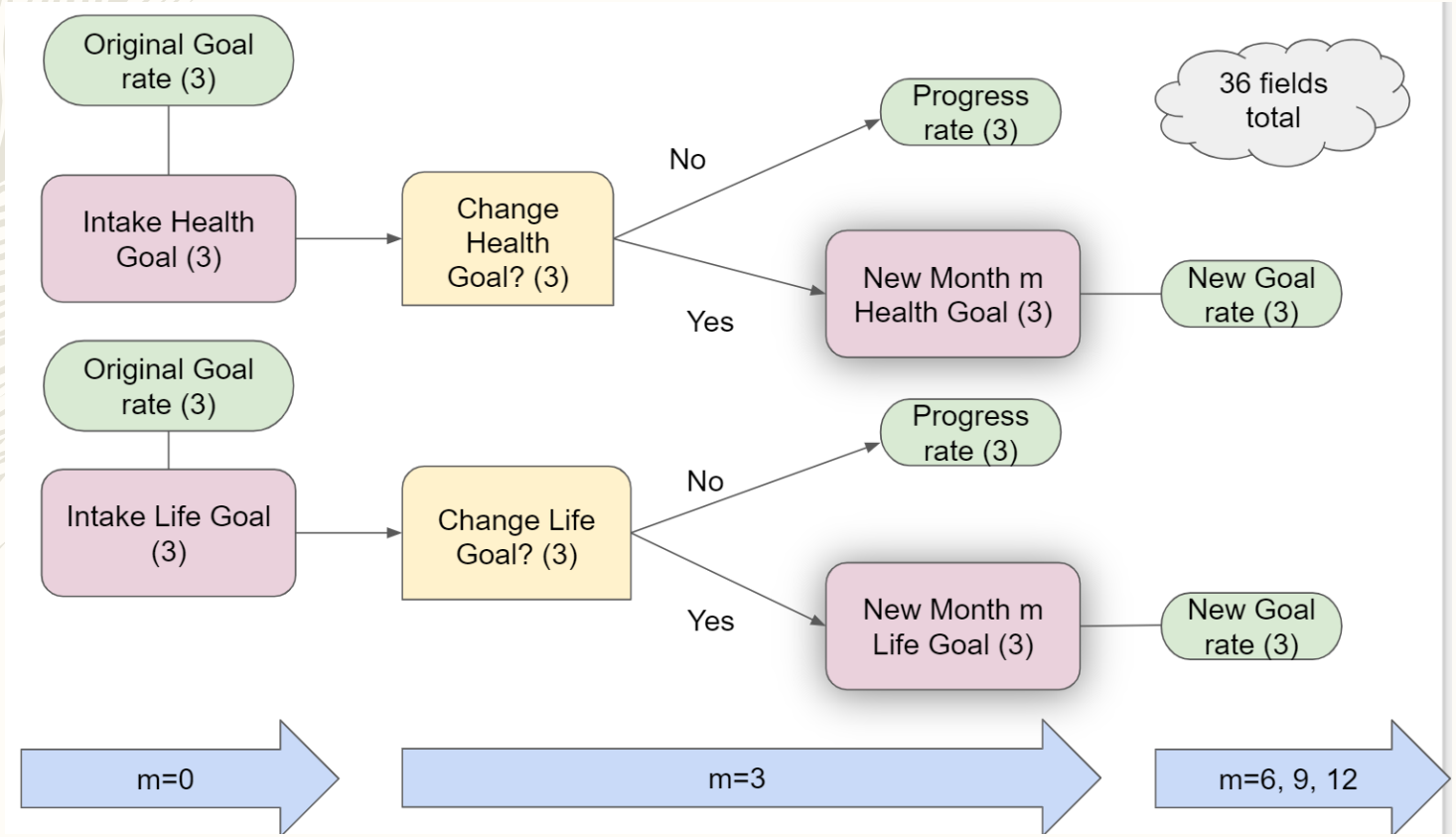
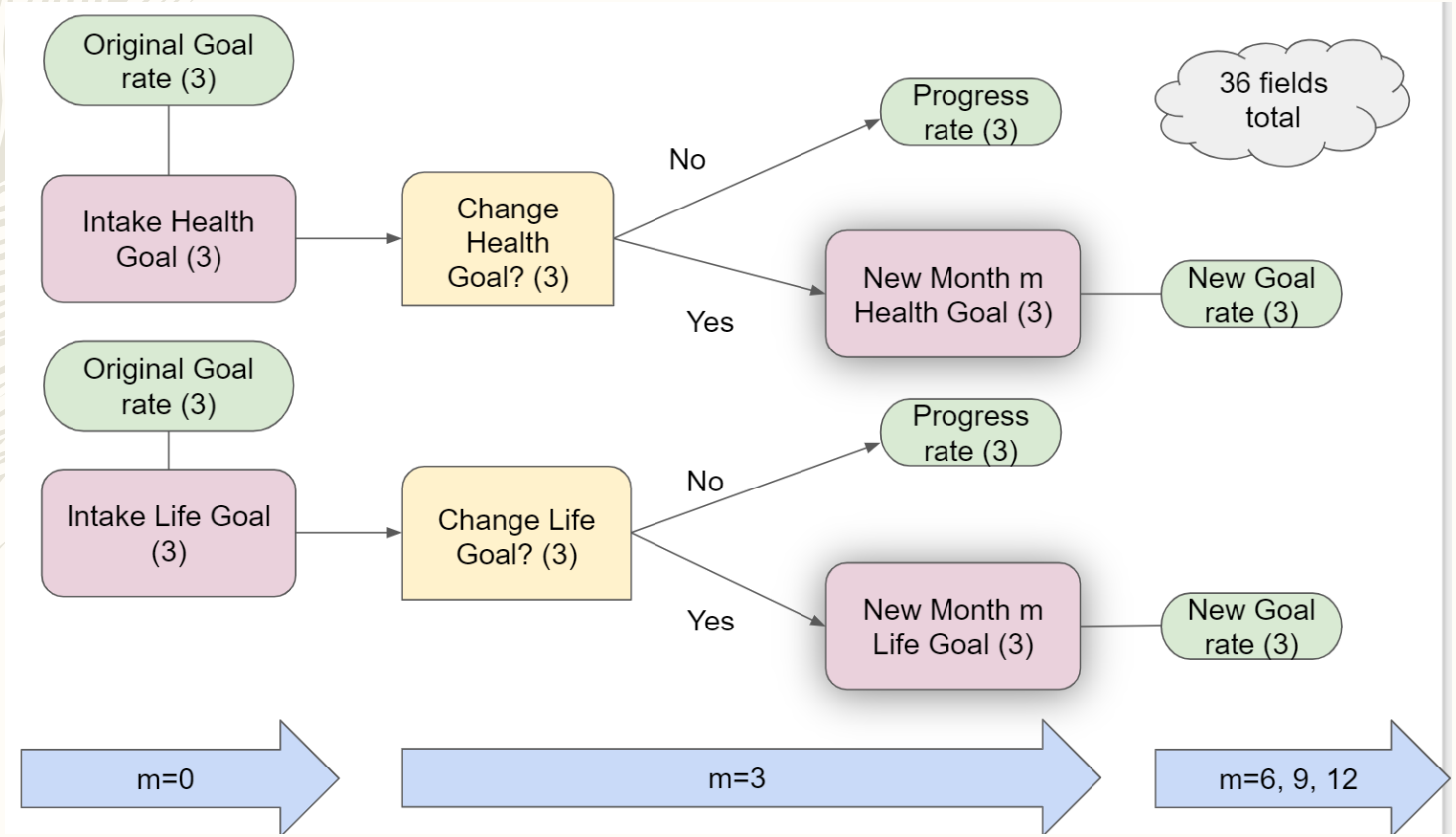
  - Recruits only high risk patients identified by machine learning algorithms
  - Have the same primary care physician care for both inpatient hospitalization and in outpatient clinics
  - C4P has additional community programs targeted at unmet needs
- Question: What goals do patients participating in C4P have? How do the categories of goals affect their outcomes?

Goal Attainment



Goal Attainment



Mixed Effect Pattern Mixture Model

Drop:
CCCCCCCC
CCCCCCCD
CCCCCCCR
CCCCCCDD
CCCCCCOO
CCCCCCRC
CCCCCCRD
CCCCCCRR

- $Y_{i,j} = \beta_0 + \beta_1 C4P_i + \beta_2\sqrt{round_j} + \beta_3\left(C4P_i * \sqrt{round_j}\right) + \beta_0^D Drop_i + \beta_1^D(Drop_i C4P_i) + \beta_2^D\left(Drop_i * \sqrt{round_j}\right) + \beta_3^D\left(Drop_i * C4P_i * \sqrt{round_j}\right) + v_{0i} + v_{1i}\sqrt{round_j} + \epsilon_{ij}$
  - i: subjects, j: observation
- $\beta_0 \sim \beta_3$ are for completers, $\beta_0^D \sim \beta_3^D$ are how dropouts differ from completers
- β_3 is the variable of interest.

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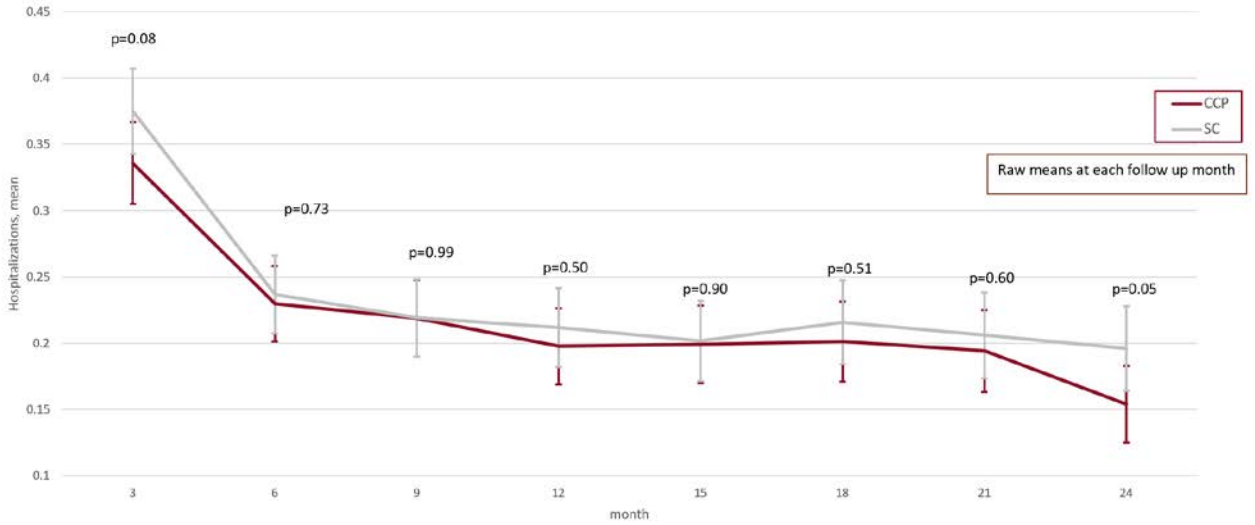
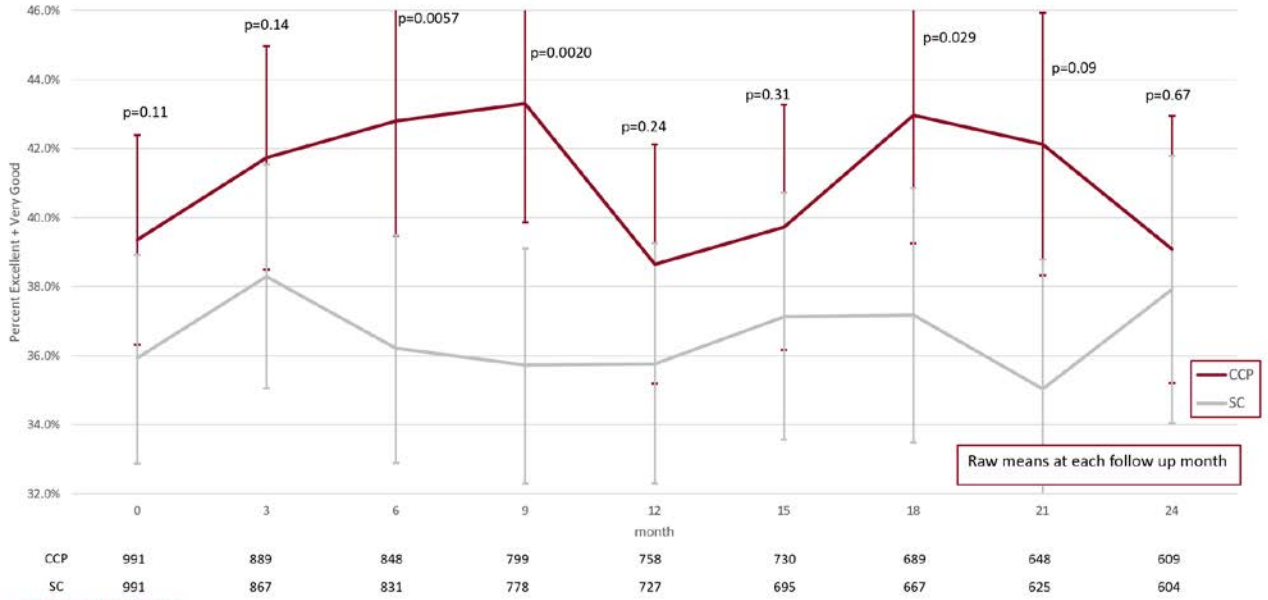
Follow-up Hospitalizations



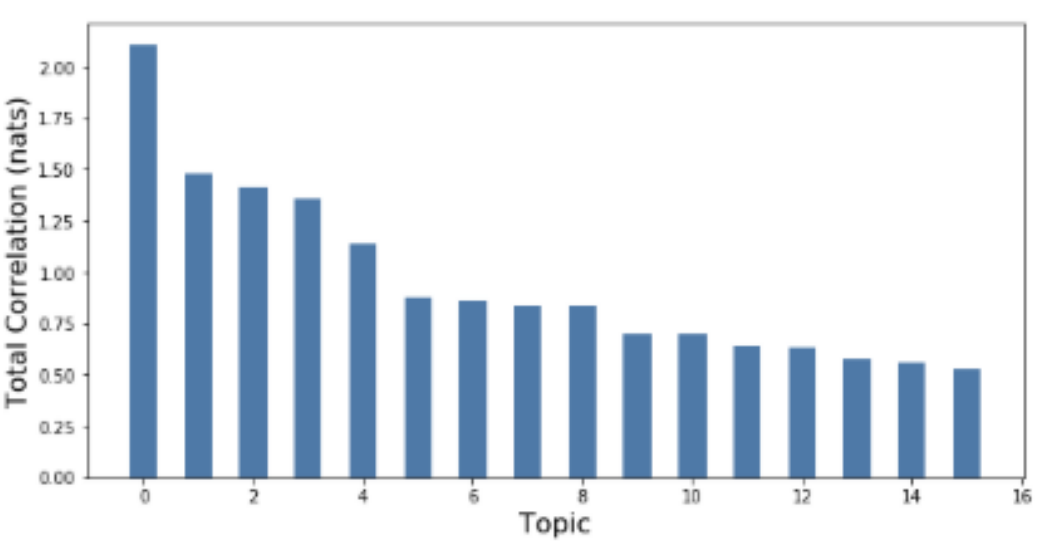
CCP	890	840	785	739	718	671	639	604

Mental Health Rating



CCP	991	889	848	799	758	730	689	648	609
SC	991	867	831	778	727	695	667	625	604

Topic Modeling for Goals in C4P



- Use Latent Dirichlet Allocation for Topic Modeling
- 16 ideal topics for both Health and Life goals reported by patients
  - Top health topic: control blood sugar, control pain, able to XX again, lose XX pounds
  - Top life topic: reunite with children, family members, work, travel, live long

Still to-do: Goal Attainment with MEPM

- $Y_{i,j} = \beta_0 + \beta_1 Goal_i + \beta_2\sqrt{round_j} + \beta_3\left(Goal_i * \sqrt{round_j}\right) + \beta_0^D Drop_i + \beta_1^D(Drop_i Goal_i) + \beta_2^D\left(Drop_i * \sqrt{round_j}\right) + \beta_3^D\left(Drop_i * Goal_i * \sqrt{round_j}\right) + +v_{0i} + v_{1i}\sqrt{round_j} + \epsilon_{ij}$
- Getting insignificant results due to small sample size