

Comparison of Outreach Methods to Encourage Enrollment in Diabetes Prevention and Weight Management Programs
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Goal of research project: To evaluate different outreach approaches to encourage individuals at high risk for diabetes to enroll in an on-line, virtual Diabetes Prevention Program

Population: members of Kaiser Permanente Colorado on June 21, 2017 who were at high risk of diabetes

Eligible members met the following criteria:

- a. Adults aged 18-75
- b. Active diagnosis of prediabetes on their problem list in their electronic medical record
- c. No diagnosis of diabetes on their problem list
- d. BMI > 25
- e. Most recent A1c test > 6
- f. No dietitian visit or dietitian class in the past three years

Primary comparison groups:

Individuals meeting the inclusion criteria were randomized to one of four groups: one control group and 3 intervention groups that had varied intensity of messaging outreach (Total N=6,588).

1) Control group N=1,863

2) Intervention group 1: N=1,863

Outreach via electronic medical record messaging only:

- a) Patient messaging occurred via text added to their personal action plan in their health record.
- b) Provider messaging occurred by adding text to a chart location that tracks prevention tests and other items a patient is due to complete.

3) Intervention group 2: N=1,862

In addition to the electronic messaging described in #2, members in this group received a letter from KP dietitians that briefly explained the no-cost virtual prevention program and invited them to enroll.

4) Intervention group 3: N=1,000

In addition to the electronic messaging described in #2, dietitians attempted to reach members by phone to personally invite them to enroll. Letters were sent to members if no telephone contact was successful.

Fewer members were randomized to this group to align with the capacity of the dietitians to complete phone call efforts.

Outcomes:

Prespecified outcomes included:

1. Enrollment in diabetes prevention or weight management class (online) (Primary outcome)
 - a. Percent of individuals who have enrolled in online diabetes prevention or weight management classes (online) over the three-month follow-up period
2. Enrollment in diabetes prevention or weight management class (in person)
 - a. Percent of individuals who have enrolled in diabetes prevention or weight management class (in person) over the three-month follow-up period
3. Change in A1c over six-months

4. Change in BMI over six-months

Statistical Plan:

1. Comparison of randomized group baseline characteristics (age, gender, BMI, or A1c) using chi-square (categorical) and t-tests (continuous) variables
2. Chi-square tests for enrollment in diabetes prevent or weight management classes
3. T-tests for change in A1c and BMI over six-months

Results:

Electronic messaging began on June 23, 2017, letter outreach was completed in early August and dietitian phone calls occurred in August and September. Process outcomes on messaging efforts and enrollment in the virtual program were measured at the end of the evaluation period on 11/10/2017.

NOTE: Do to the gradual roll-out of the intervention, we changed our follow-up period from three months to 4.5 months.

As expected, the randomized comparison groups did not differ on age, gender, BMI or A1c values. The reach of electronic messaging to patients, estimated by the percentage who accessed their personal action plan during the study time period, was 24.9%. Similarly the reach of the electronic messaging to providers, estimated by views of the prevention alert page during the study time period, was 54.8%. Reach estimates were consistent across the randomized groups.

Enrollment in the virtual prevention program was the primary outcome of interest. Table 1 shows the estimated enrollments by outreach group. Although enrollment significantly increased with increased intensity of outreach, the total number of patients who enrollment was low in all groups. Similar results were seen for the secondary outcome of interest (Table 2).

Planned comparisons of changes in BMI, A1c or other health indicators for enrollees after program completion were not feasible due to the limited number of enrollees in the outreach groups.

Conclusion:

Although there was a statistically significant association between more intensive outreach and increased enrollment in the virtual Diabetes Prevention program, the overall uptake of enrollment was low (2%, 117 out of 6,588).

Primary outcome (on-line)

Table 1: Enrollment in the Virtual Diabetes Prevention On-line program

Outreach group:	No	Yes	Total N
	N and %	N and %	
Control group: No outreach	1856 99.62	7 0.38	1863
Intervention group 1: Electronic messaging to patients/providers	1851 99.36	12 0.64	1863
Intervention group 2: + Dietitian letter	1823 97.91	39 2.09	1862
Intervention group 3: Dietitian phone outreach	941 94.10	59 5.90	1000

Chi-square p value <0.001

Secondary outcome (in person classes)

Table 2: Enrollment in In-Person Classes

Outreach group:	No	Yes	Total N
	N and %	N and %	
Control group: No outreach	1848 99.19	15 0.81	1863
Intervention group 1: Electronic messaging to patients/providers	1849 99.25	14 0.75	1863
Intervention group 2: + Dietitian letter	1838 98.71	24 1.29	1862
Intervention group 3: Dietitian phone outreach	975 97.50	25 2.50	1000

Chi-square p value <0.001