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# PRELIMINARY EVALUATION OF SHARED PARTICIPANT PROGRESS ON BEHAVIORAL CHANGE: ANALYSIS OF ACTION PLANS ONE, TWO, AND THREE

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## INTRODUCTION

Project SHARED has evolved tremendously since its inception in the summer of 2000. The program has screened over 600 individuals, and over 300 were found to be eligible for participation. While some of those individuals have dropped out of the program over time, others have remained and have experienced substantial changes in their health behaviors.

This report describes changes in the behavioral stages of the Project SHARED participant population over the last 16 months. This document focuses solely on the effort to measure behavioral change among SHARED participants, and to attempt to identify behavioral change as it correlates with demographic and socioeconomic characteristics of participants. Other documents describe the specific objectives of the project, the collaboration component of SHARED, and the social, rather than medical approach to health taken in this effort (*See Project SHARED: An Experiment in Collaboration*, and *Annual Progress Report for Project SHARED; Year 1*).

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## MEASURING CHANGES IN BEHAVIOR

One important objective of Project SHARED is to encourage participants to engage in healthier behaviors. In order to evaluate whether SHARED has a positive impact on participant behavior, it is necessary to find a way to measure behavior before and after participation in the program.

The Prochaska Transtheoretical Model of Change, and its Stages of Change measurement instrument were identified early on in the program design as potentially useful for SHARED. The model has been successfully applied to a wide variety of problem behaviors, and Project SHARED planned to address a wide variety of behavioral issues. Further, the survey instrument uses questions that respondents can answer easily.

### Stages of Change

The Stages of Change survey has two forms; a long form with 16 questions, and a short form with 5 questions. Initially, we decided to use the longer survey form. Unfortunately, the survey proved to be difficult to administer and to analyze. After the first round of Action Plans, we opted to switch to the short form. The short form was much simpler to administer, much simpler to analyze, and was found to be more useful as a tool in helping the participants to identify their own progress in behavioral changes.

The Stages of Change survey measures an individual's current stage of behavioral change both before and after an Action Plan, or intervention. In SHARED, most participants have been involved with more than one Action Plan, and many are still ongoing. This report primarily discusses the results of Action Plans One and Two, for those persons for whom data have been collected so far.

### Behavioral Stages

The Stages of Change long form survey places individuals in one of four behavioral stages:

- **Pre-Contemplation:** Not intending to take action in the next 6 months.
- **Contemplation:** Intending to change in the next 6 months.

- **Action:** Have made changes in the last 6 months.
- **Maintenance:** Working to prevent relapse.

The short form includes these four stages along with:

- **Preparation:** Intend to take action in the next month.

which falls in the middle of the behavioral stages.

## Action Plans

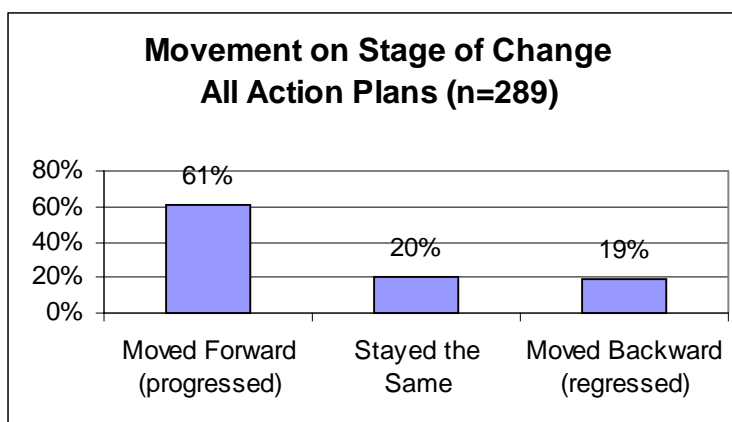
SHARED participants work with their service coordinator to identify a specific behavior that they would like to address for a period of several weeks or months. Once they select a behavior, they identify an “Action Plan” that is geared to address the targeted behavior. At the start of the Action Plan, the participants complete a Stage of Change survey. At the end of the Action Plan time period, the participants complete another Stage of Change survey, which allows us to evaluate whether their behavioral stage changed over the course of the Action Plan time period.

Once the first Action Plan is complete, some participants then select another behavior to work on, and they begin Action Plan Two. Other participants do not continue on with additional Action Plans. Participants have completed between one and six Action Plans.

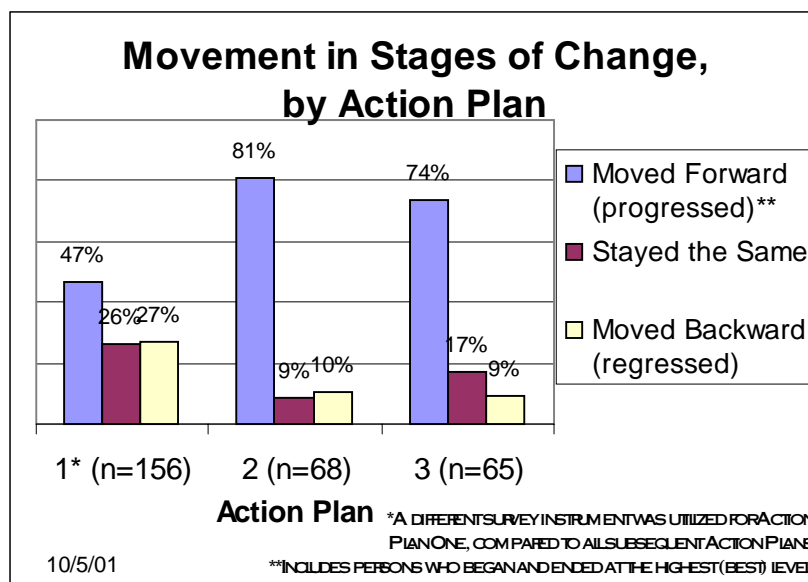
At the time of this report, 156 participants had completed Action Plan One, 68 individuals had completed Action Plan Two, and 65 individuals had completed Action Plan Three. The individuals who completed Action Plans Two and Three are almost fully subsets of those who completed Action Plan One (61 of the 68 who completed AP Two, and 60 of the 65 who completed AP Three). In some cases, we have received complete data on Action Plan Two or higher before receiving the complete data on Action Plan One, which explains the slight discrepancy.

## Movement on Stages of Change

First we look at the movement on the Stages of Change with the Action Plan as a unit of analysis. Among the total 289 Action Plans completed for this preliminary analysis, 61% resulted in an individual moving forward on the Stage of Change scale. About one-fifth (20%) stayed at the same Stage of Change, and the remainder moved backward.



To look at the progress on Action Plans differently, we can look at the progress on an individual level, and look at each round of Action Plans separately. Among the 156 individuals for whom we have information on Action Plan One, 47% moved forward on the Prochaska scale, while 27% moved backward, and the remaining 26% stayed at the same stage of change (see chart below).



Among the 68 individuals who completed Action Plan Two, 81% moved forward, and of the 65 who completed Action Plan Three, 74% moved forward.

Action Plans Two and Three show a substantially higher proportion of participants moving forward as compared to Action Plan One. Recall that we changed the instrument used to measure the Stage of Change between Action Plans One and Two. The shorter form is considered easier for the respondent to understand, and is more widely used than the long form. Therefore, we believe that the results for Action Plans Two and higher are more representative of the actual behavioral changes than the result for Action Plan One.

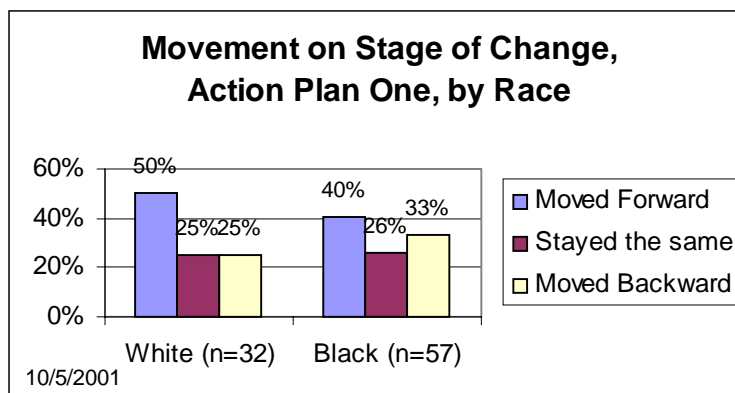
## Behavioral Changes From Action Plan One by Demographics

### *Race*

Project SHARED is interested not only in identifying the proportion of participants who progress on the behavioral scale, but also in evaluating the characteristics of those persons who progress versus those who do not progress.

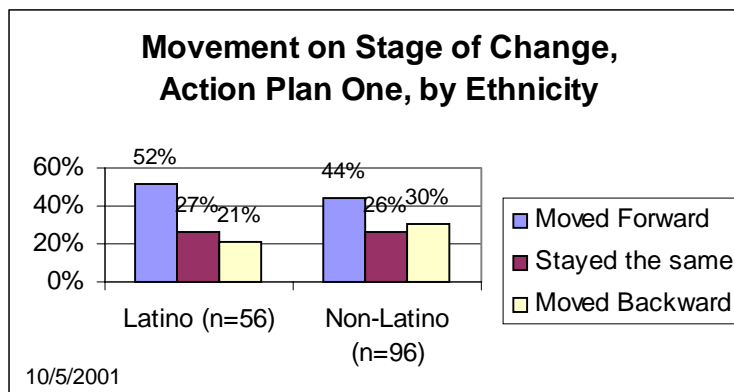
Information on participants' demographic and socioeconomic characteristics was collected during the screening process. While most of the information was collected comprehensively, information on race was often missing for some reason. Among those who completed Action Plan One (AP 1), we have information on race for only 61%.

Whites were slightly more likely than Blacks to move forward a stage of behavioral change (50% and 40%, respectively).

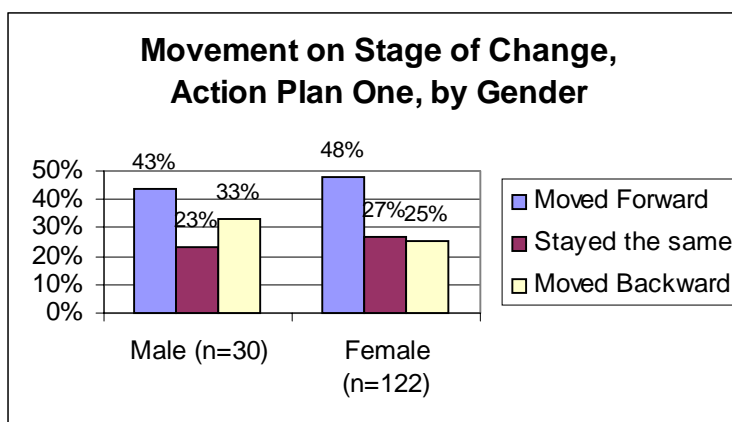


*Ethnicity*

Latinos were more likely to move forward a behavioral stage (52%) compared to non-Latinos (44%) on AP 1.

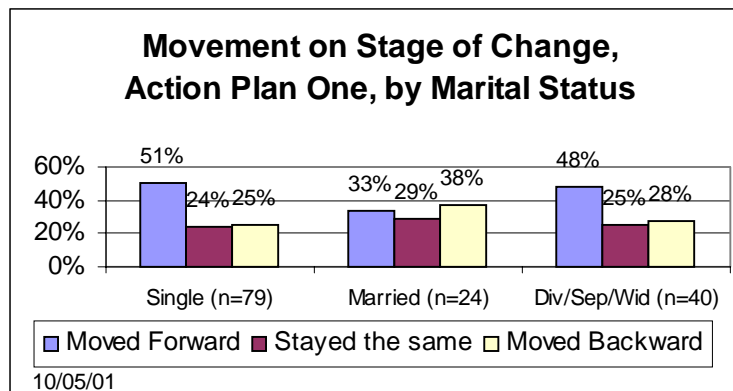
*Gender*

Males and females were equally likely to move forward on the Stages of Change in AP 1 (43% and 48%, respectively).



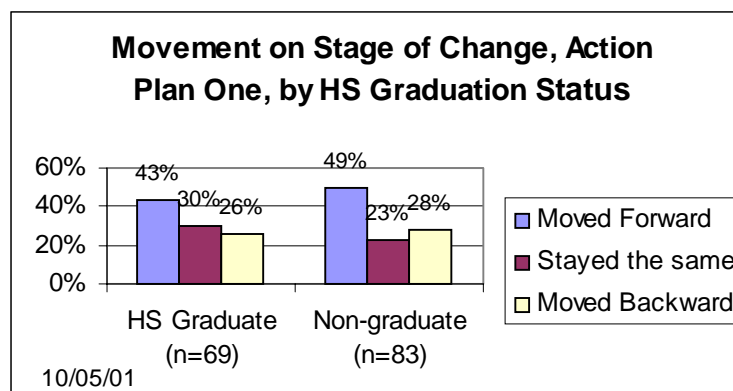
### Marital Status

Married persons are generally considered to have more social capital than single persons. We might therefore expect that married persons would be more likely to move forward on the behavioral stages as compared to their single counterparts. However, in AP 1, single persons were much more likely than married persons to move forward a stage (51% versus 33%).



### High School Graduates

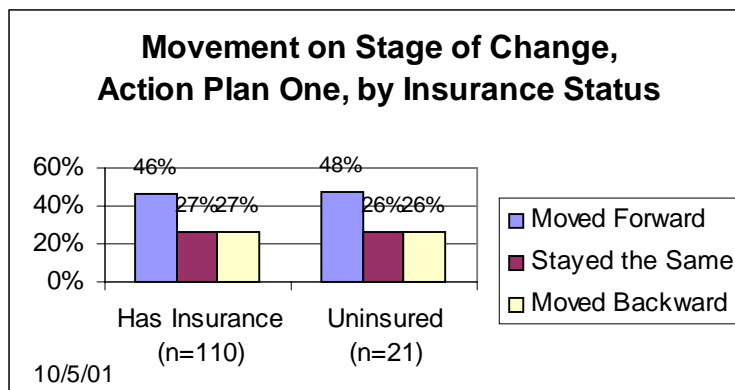
We might hypothesize that high school graduates would be more likely than non-graduates to move forward on the behavioral scale. However, in AP 1, 49% of non-graduates moved forward compared to 43% of HS graduates.



## Insurance Status

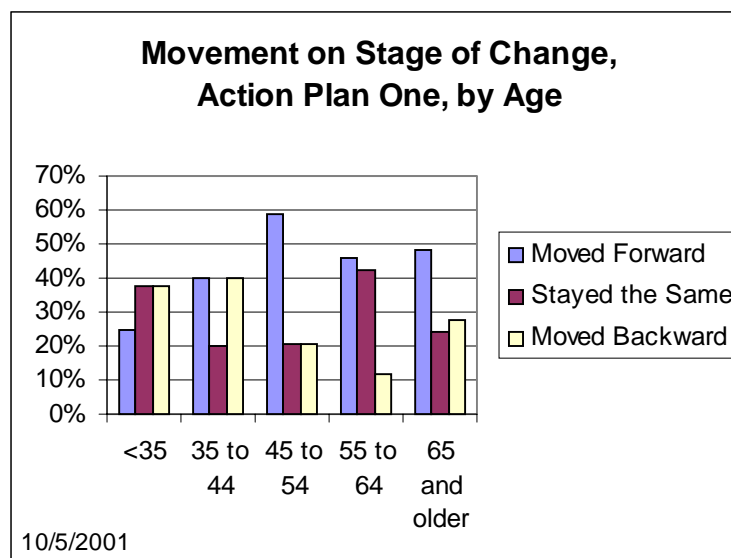
**Health insurance does not appear to be correlated with participants' movement on the stages of change scale.**

Health insurance does not appear to be correlated with participants' movement on the stages of change scale. While 46% of those with insurance (private, Medicaid, or other) moved forward on AP 1, this compares to 48% of those who were uninsured. To look at those on Medicaid separately, 45% of those on Medicaid moved forward on the stage of change scale.



## Age

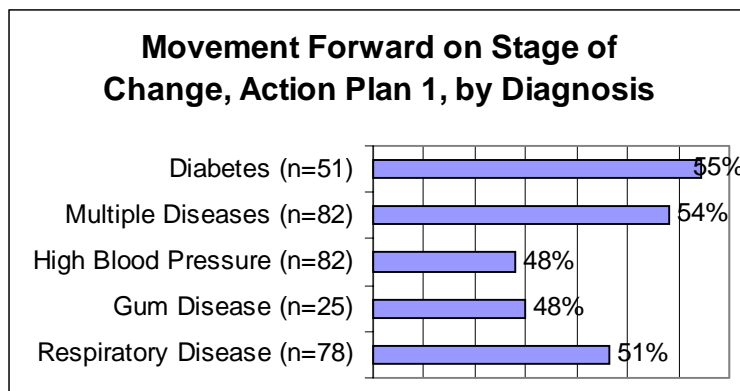
The under 35 age group was by far the least likely to move forward on the behavioral stages of change (14%). The age groups 45 and older were the most likely to move forward.





## Disease Diagnosis

Slightly more than half of persons with Diabetes, with Respiratory disease, or with multiple diseases moved forward one or more stages of change during their first Action Plan.

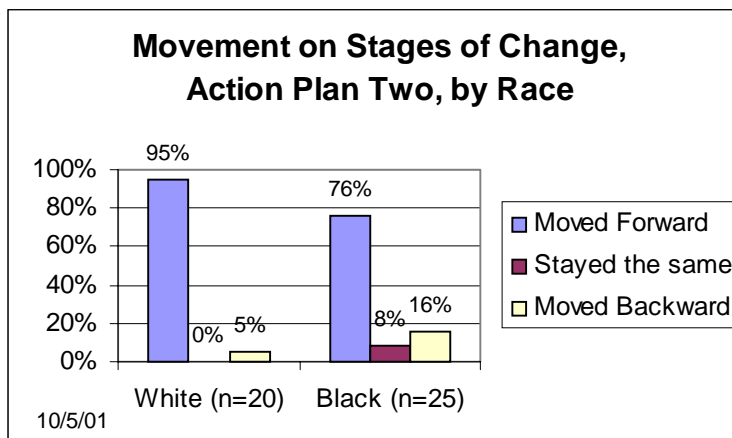


## Behavioral Changes from Action Plan Two

Results for Action Plan Two (AP 2) differed from those for AP 1. Comparisons between demographic categories were in some cases in the opposite direction compared to the results for AP 1. However, it is important to note that the small sample size for both sets of data can lead to unreliable results.

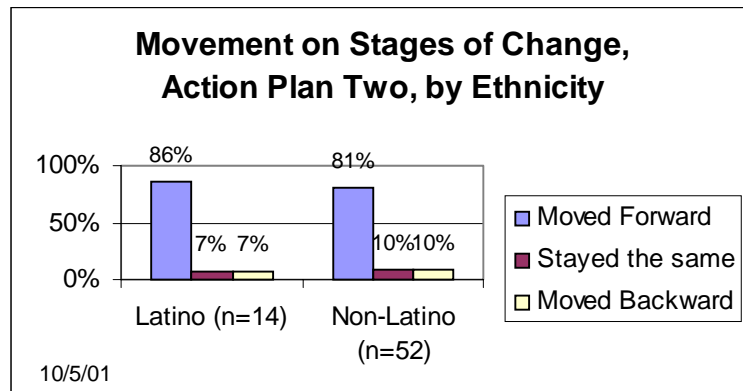
## Race

Among those who completed AP 2, and for whom we had race information, whites were much more likely (95%) to move forward on the behavioral scale compared to blacks (76%).

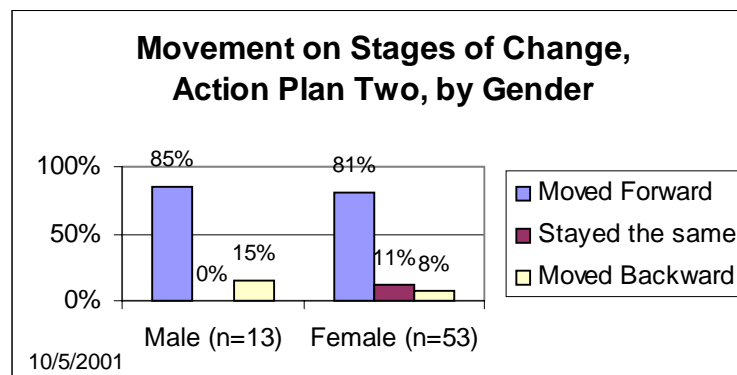


*Ethnicity*

For Action Plan 2, Latinos and non-Latinos were nearly equally likely to move forward on the behavioral scale (80% and 76%, respectively).

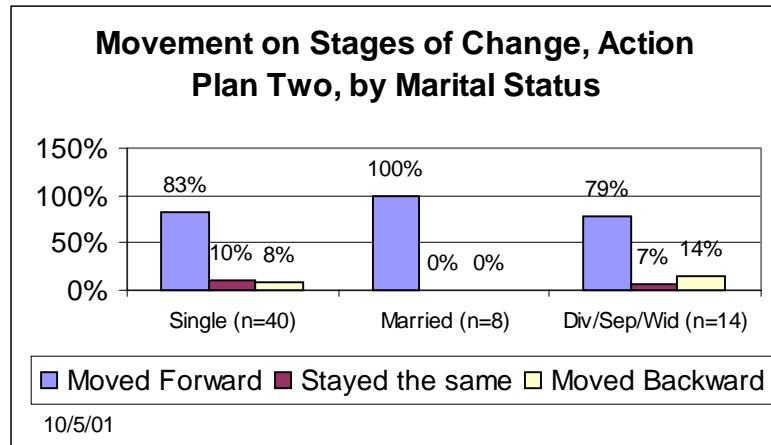
*Gender*

As in AP 1, males and females were nearly equally likely to move forward on the stages of change during Action Plan 2, as shown below.



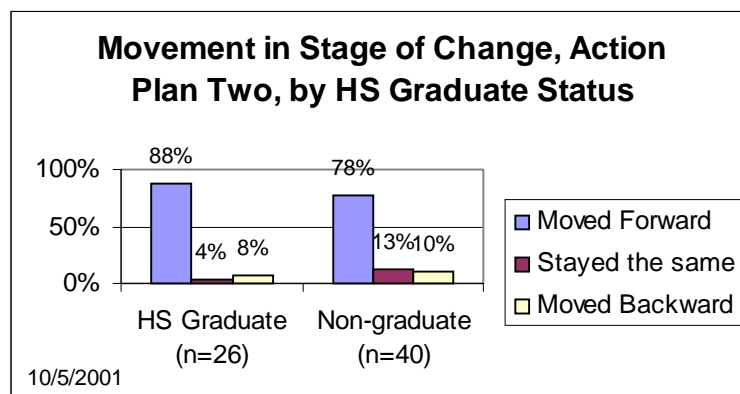
*Marital Status*

In AP 2, all married participants moved forward on the Stages of Change, compared to 83% of the single participants. Again, note the small sample sizes when the small number of participants who completed AP 2 is broken into multiple marital status categories.



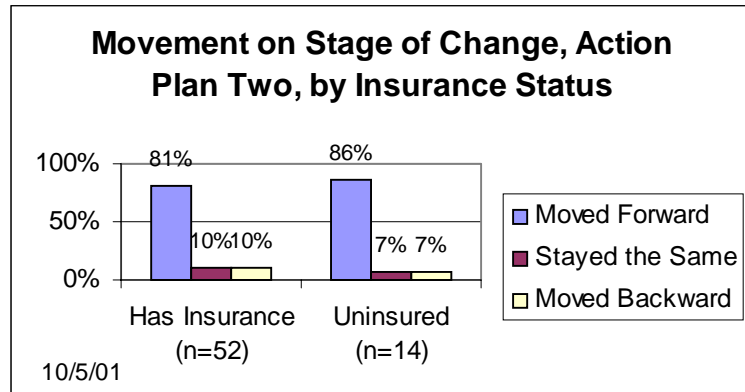
*HS Graduates*

HS graduates were more likely (88%) than non-graduates (78%) to move forward on the stage of change scale. This is a different direction than the results of AP 1, but is the expected result.



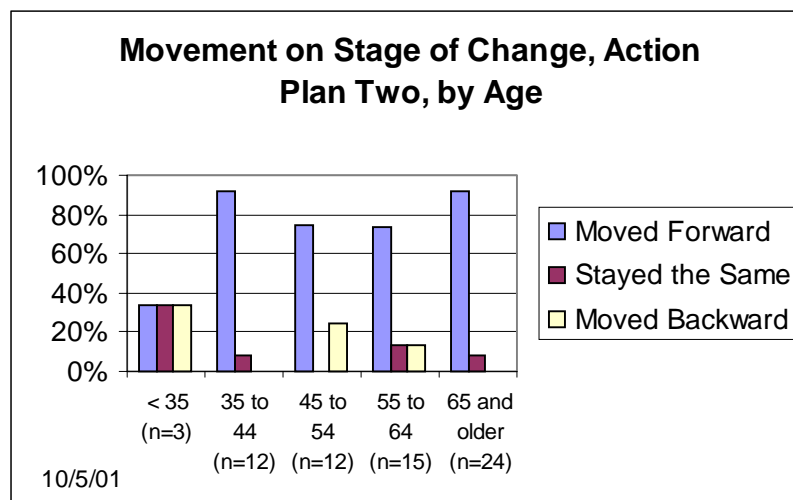
*Insurance Status*

While 81% of those with some type of health insurance moved forward on the behavioral scale, this compares to 86% of the uninsured, and 81% of those on Medicaid. These results are consistent with those from AP 1 which showed that insurance status was not correlated with the results on the stages of change.



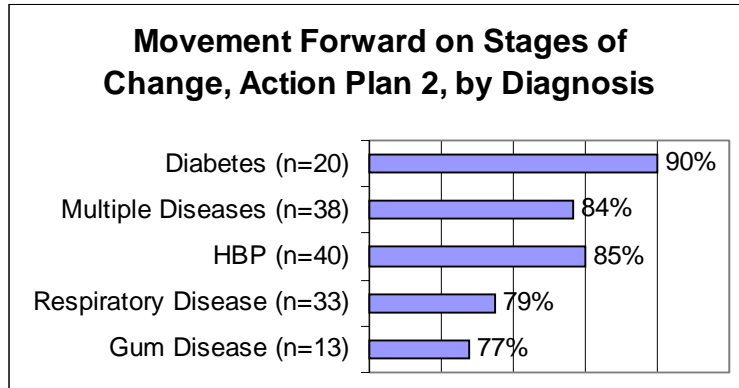
*Age*

The very youngest group of participants, those aged less than 35, were the least likely to move forward a behavior stage on AP 2. The two age groups most likely to move forward were those aged 35 to 44, and those aged 65 and older. In fact, in both of those age groups, no participants moved backward on the behavioral stages of change.



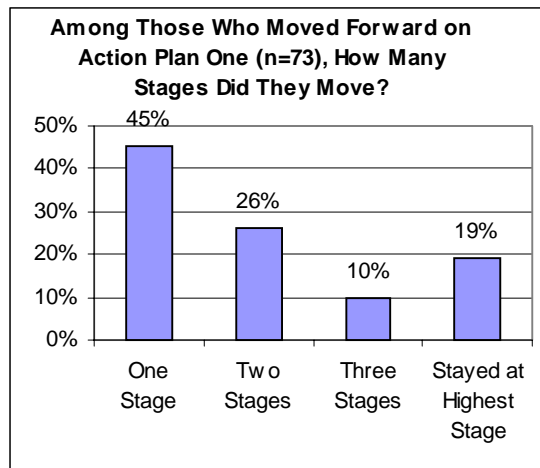
*Disease Diagnosis*

Nearly all persons with Diabetes moved forward one or more stages of change on Action Plan 2 (90%). Interestingly, 84% of persons with diagnosis of multiple diseases moved forward.



**How Many Stages did Participants Move?**

Among the 73 participants who moved forward on the Stages of Change for Action Plan One, 45% of them moved one stage, 26% moved two stages, 10% moved three stages, and the remaining 19% started and ended at the highest attainable stage (maintenance).



## How Many Participants Moved into an Action or Maintenance Stage?

Among the 73 individuals on AP 1 who moved forward, 92% moved into either the action or maintenance behavior stage, indicating some real change in their health behaviors.

To look at each initial category individually, 73% of those who started in Pre-contemplation moved into either Action or Maintenance, while 6 moved only to the contemplation stage. All of the persons who moved forward and started in Contemplation moved into Action or Maintenance. All of those persons who moved forward and started in Action moved to Maintenance.

### Among Those who Moved Forward on Action Plan One (n=73), How Many Stages Forward Did They Move?

Starting Stage	Ending Stage							
	Total		Contemplation		Action		Maintenance	
Precontemplator	22	100%	6	27%	9	41%	7	32%
Contemplation	20	100%			10	50%	10	50%
Action	17	100%					17	100%
Maintenance	14	100%					14	100%

**Those individuals who move forward are moving to stages in which they take action on their health behaviors.**

It appears that those individuals who move forward are moving to stages in which they take action on their health behaviors. If large numbers of individuals were moving from pre-contemplation to contemplation, that would indicate forward movement, but not to a point that involves a change to action-oriented behavior. *However, with the majority moving into Action or Maintenance, we see participants who were not actively involved in changing their behavior prior to Action Plan One fully engaged in behavioral change after Action Plan One.*

Among the 53 persons in AP 2 who moved forward a stage or more, all of them ended up in either the Action or Maintenance stage. The one person who started in the Contemplation stage moved to Action, 47 of the 48 who started in the Preparation Stage moved to Action while the other moved to Maintenance.

Finally, of the 3 that started in the Action stage, all moved to Maintenance.

**Among Those who Moved Forward on Action Plan Two (n=53),  
How Many Stages Forward Did They Move?**

Starting Stage	Total	Ending Stage					
		<u>Contemplation</u>	<u>Preparation</u>	<u>Action</u>	<u>Maintenance</u>		
Precontemplation	0	NA					
Contemplation	1	100%		1	5%	0	0%
Preparation	48	100%		47	98%	1	2%
Action	3	100%				3	100%
Maintenance	1	100%				1	100%

**All 53 individuals who moved forward on AP 2 moved into either the Action or Maintenance stages.**

The results for Action Plan Two are even stronger than for Action Plan One in terms of movement forward on the Stages of Change. *All 53 individuals who moved forward on Action Plan Two moved into either the Action or Maintenance stages.* This is a more successful outcome than having the participants move forward, but only to the contemplation or preparation stages.

## Conclusion

While the full complement of data have not yet been collected, the progress to date is quite promising. Of the 156 individuals completing Action Plan One, 47% moved forward, and the majority of those persons moved from a non-active stage (contemplation or pre-contemplation) to an active behavioral change stage (Action or Maintenance). Similarly, of the 68 individuals who completed Action Plan Two, 81% moved forward, and all of them moved into an active behavioral change stage.

Project SHARED appears overall to have a positive impact on the individuals involved. One important drawback to the evaluation of the impact of SHARED is the lack of a comparison group

completing the Stage of Change measurement forms. This prevents us from evaluating whether it is the actual intervention that impacts an individual's stage of change, or whether it is simply the act of someone showing an interest in an individual, or some other external influence. Nonetheless, as a pilot effort we have seen some important successes. Further, future analysis will evaluate Medicaid claims data for SHARED participants, and will compare the utilization outcomes to the general Medicaid population.





