



Investing in the Future of the Healthcare Workforce

An Analysis of the Impact of the HCC Programs at
TriHealth

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Investing in the Future of the Healthcare Workforce: Analysis of the Health Careers Collaborative Programs at TriHealth

By: Nakul Bhardwaj, MPH and Ryan Moran

BACKGROUND

- HCC was created to address the shortage of employment in health related fields for unemployed individuals and lower wage incumbent workers.
- The goals of the HCC programs are to increase access to healthcare careers by underutilized labor pools, alleviate regional workforce shortages, and increase the diversity of health care workforces in Greater Cincinnati.

PURPOSE OF PROJECT

- Analyze the return-on-investment (ROI) effects of the HCC program on TriHealth employees.
- Desired Deliverables of Project:
 - Develop conclusions and support for ongoing, future collaboration for sustaining the program

METHODS

- Period of study = Feb. 1, 2009 to Dec. 31, 2012
- Population study – Job Codes:
 - *Patient Care Assistants (PCA)* – 5436, 5453
 - *School-at-work (SAW) participants* – A677, B550, A538, 199C, A611, B025, B953, B739, B485, B801, 5457, 2346, A532, B938, A681, 2346, A695, B717, A680, B958, A685, B781, B543, A619, B938
 - *HCC Cohort participants* – B025, B728, B801, 2007, 2483, B095, B867, 2025, B953, 5453, B550, B780, B479, 2028, B893, 2487, 2468, 3401, B801, 5436, B115, B025, B483, 2028, B958, B479, A695, 5693, A685, B781, A619, 5420, 5423, 2954, 4449, 2468, B021, B025, B996, 2476, B780, B953, B869, 5697, B693
- Indicators Examined:
 - Evaluation scores, turnover rate, Presence of employee performance counseling, employment satisfaction, diversity, and change in pay rate.

RESULTS

Turnover Rate (Provided by Barbara Jacobs and Tim Rockstroh)

Methodology

Turnover rate was determined based on information provided by the Human Resources Department. The number of total hires within the time period and number of terminations were collected. Treatment groups below are made up of all individuals who participated in the selected program. Respective control groups are made up of employees who have not participated in the associated programs/training, but have similar job codes (as indicated above). Data regarding each group is showcased below.

Table 1. PCA Turnover from 2/01/2012-12/31/2012

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	Begin Count	End Count	ALL FT/PT Terms	Turnover %	Voluntary Terms	Turnover %	Involuntary Terms	Turnover %
PCA - Treatment	71	71	4	5.63%	3	4.23%	1	1.41%
PCA – Control (total-treatment)	265	255	35	13.46%	31	11.92%	4	1.54%

Table 2. PCA Turnover within 6 months of hire

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	Begin Count	End Count	ALL FT/PT Terms	Turnover %	Voluntary Terms	Turnover %	Involuntary Terms	Turnover%
PCA - Treatment	71	71	3	4.23%	2	2.82%	1	1.41%
PCA - Control	265	255	2	0.77%	2	0.77%	0	0.00%

Table 3. School-At-Work Turnover from 02/01/2009-12/31/2012

	# of Employees	All FT/PT Terms	Turnover %	Voluntary Terms	Turnover %	Involuntary Terms	Turnover %
SAW - Treatment	36	6	<u>16.67</u>	5	13.89	1	2.78
SAW - Control	930	503	<u>56.99</u>	350	37.64	153	16.46

Table 4. HCC Cohort Turnover from 02/01/2009-12/31/2012

	# of Employees	All FT/PT Terms	Turnover %	Voluntary Terms	Turnover %	Involuntary Terms	Turnover %
COHORT - Treatment	56	2	<u>3.58</u>	2	3.58	0	0
COHORT - Control	3106	1348	<u>43.4</u>	1060	34.13	288	9.28

Discussion and Summary

Table 1 and Table 2 provide results for the Patient Care Assistant (PCA) groups. As can be seen in Table 1, the PCA treatment group turnover rate (5.63%) was lower than the PCA control group (13.46%). It is interesting to note that the turnover rate for the PCA treatment group within 6 months of hire was greater than their control counterparts. Such differences in 6 month turnover could be directly attributed to the program. However, a greater sample size may be needed to garner more significance for this finding.

Table 3 provides turnover rates for the School-At-Work (SAW) groups. Within the February 1, 2009 to December 31, 2012 timeframe, it can be noted that turnover rate within the control group is significantly greater in all terms, voluntary, and involuntary compared to the treatment group. Similarly, turnover rates in the HCC cohort group were significantly greater in the control group versus the treatment group (as seen in Table 4). These drastic differences in turnover rate can be attributed to the benefits of program involvement and increased employee satisfaction.



The drastic differences in turnover rate for the SAW and Cohort program attribute to cost savings for TriHealth. According to the United States Department of Labor, the cost of turning over an employee is nearly 33% of the employee's annual salary and wage. Regarding the SAW group, the average hourly wage is \$14.20, or \$27,264 per year. The average cost of turnover for a SAW participant is \$8,997. Over the course of the study period, the cost of turnover for the SAW treatment group was \$17,994 per year. However, for the SAW control group, the cost of turnover is \$62,979, if scaled to match the sample size of the SAW treatment. That accounts for a savings of nearly \$45,000 per year, or \$135,000 over the course of the study period.

Regarding the HCC Cohort group, the average hourly wage is \$14.63, or \$28,089 per year. The average cost of turnover for a HCC Cohort participant is \$9,269. Over the course of the study period, the cost of turnover for the HCC Cohort treatment group was \$6,117 per year. However, for the HCC Cohort control group, the cost of turnover is \$75,078, if scaled to match the sample size of the HCC Cohort treatment. That accounts for a savings of nearly \$68,961 per year, or \$206,883 over the course of the study period.

Additionally, the participants of the SAW and HCC Cohort program saw lower turnover rates than regional turnover averages. According to the Greater Cincinnati Health Council Vacancy and Turnover Assessment, the regional turnover rate for all hospital and physician practice employees is approximately 10.4% for full time equivalent employees. Further, when controlling the data for specific, similar job codes, the regional turnover rate was 12.66%. Being that the SAW and HCC Cohort programs boasted much lower turnover rates, one can conclude that the HCC programs are effective in retaining healthcare workers.

Employment Satisfaction (Provided by Marquita Thatcher)

Methodology

Employee Satisfaction was determined based on surveys provided by HealthStream. Due to confidentiality issues, individual survey results were not attainable. However, average percentages of group results (treatment versus control) were obtained based on job code. Thus, the control group was formed with individuals of similar job code. Within each group, two indicators were examined in the survey: Top Box scores and Percent (%) Positive. Scores for each question ranged from 1 (poor) to 5 (excellent).



Top Box scores indicate the percentage of responses that were scored 5 out of 5 by the employee. Percent Positive scores indicate the percentage of responses that were scored 4 OR 5 out of 5. Employee Satisfaction was agreed to be attained by any score greater than or equal to 4. These two indicators were examined in the results obtained from Question 8 of the survey and scores from the Employment Engagement Theme. Below, is a description of each:

Question 8: On a scale of 1 to 5 (poor to excellent), how proud are you to be a part of this organization?

Employment Engagement Theme: Questions 7 – 11 on HealthStream Survey:

- Question 7: My manager cares about me as a person
- Question 8: I am proud to be a part of this organization
- Question 9: I am highly motivated to contribute to the organization’s success
- Question 10: I find a strong sense of accomplishment in my work
- Question 11: I understand how my job supports the organization’s mission

Table 5. Employee Satisfaction scores for Patient Care Assistant (PCA) groups

	Completed Surveys (N)	Total Participation rate	Question 8		Employee Engagement Theme	
			Scores of 5 (Top Box)	Scores of 4 OR 5 (% Positive)	Scores of 5 (Top Box)	Scores of 4 OR 5 (% Positive)
PCA - Treatment	11	37 %	36.4%	90.9%	34.5%	81.8%
PCA - Control	114	35 %	47.4%	82.5%	45.4%	81.1%

Table 6. Employee Satisfaction scores for School-At-Work Employees

			Question 8	Employee Engagement Theme
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	Completed Surveys (N)	Total Participation rate	Scores of 5 (Top Box)	Scores of 4 OR 5 (% Positive)	Scores of 5 (Top Box)	Scores of 4 OR 5 (% Positive)
SAW - Treatment	19	63%	31.6%	78.9%	33.7%	74.7%
SAW - Control	392	46%	51.4%	83.9%	48.2%	82.4%

Table 7. Employee Satisfaction scores for HCC Cohort Employees

	Completed Surveys (N)	Total Participation rate	Question 8		Employee Engagement Theme	
			Scores of 5 (Top Box)	Scores of 4 OR 5 (% Positive)	Scores of 5 (Top Box)	Scores of 4 OR 5 (% Positive)
HCC - Treatment	35	65%	65.7%	88.6%	54.3%	88.0%
HCC - Control	1742	50%	46.2%	82.1%	44.3%	80.0%

Discussion and Summary

Employment Satisfaction results varied greatly between each of the groups. According to Table 5, employee satisfaction scores were relatively similar for both treatment and control PCA groups. However, percent positive scores were slightly larger in the treatment group for question 8. Participation rates were also similar for both groups in the PCA.

Results from the School-At-Work group, on the other hand, indicated some negative results. Although percent positive scores were not drastically different, top box scores varied a bit more. The SAW control group yielded higher employee satisfaction for both question 8 and employee engagement. Participation rates varied as well in the treatment and control group, as the SAW treatment group had more participation.

Despite the great variation in sample size, the HCC cohort groups indicated more positive results (Table 7). In both question 8 and the employee engagement theme, top box



scores and percent positive scores were higher in the HCC treatment group. This could reinforce the hypothesis that the HCC cohort program plays an influential role on employee morale and engagement within the workplace.

Diversity—Race and Gender (Provided by Kim Lacinak and Keith Marsh)

Methodology

To compare the overall evaluation scores between participants in the three HCC programs versus those employees not enrolled in the programs, data was collected through TriHealth’s Human Resources Department. The race and gender diversity was collected for the PCA, SAW, and HCC Cohort group. To effectively compare these results, a control group of employees who did not or had not participated in the HCC programs were identified. Therefore, the employees in the control group matched the job codes of employees in each of the three HCC programs. The percentages of race and gender diversity were then found for the control group. The results of this collection are below:

Table 8. Diversity profile of PCA groups

	PCA Treatment (n=71)	PCA Control (n=297)
American/Alaskan Indian	0.0%	0.3%
Asian	2.9%	1.0%
Black/African American	28.5%	17%
Hawaiian/Pacific Islander	0.0%	0.3%
Hispanic	2.9%	0.7%
Two or more	1.4%	0.7%
White/Caucasian	64.3%	80.0%
Male	15.7%	16.0%
Female	84.3%	84.0%

Table 9. Diversity profile of SAW groups

	SAW Treatment (n=36)	SAW Control (n=1,054)
American/Alaskan Indian	0.0%	0.3%
Asian	2.7%	1.2%
Black/African American	44.0%	33.0%
Hawaiian/Pacific Islander	0.0%	0.0%
Hispanic	5.5%	0.4%
Two or more	0.0%	0.9%
White/Caucasian	50.0%	64.0%
Male	25.0%	29.6%
Female	75.0%	70.3%

Table 10. Diversity profile of HCC Cohort groups

	HCC Cohort Treatment (n=56)	HCC Cohort Control (n=3,676)
American/Alaskan Indian	0.0%	0.1%
Asian	1.78%	1.2%
Black/African American	21.4%	13.8%
Hawaiian/Pacific Islander	0.0%	0.1%
Hispanic	1.78%	0.6%
Two or more	0.0%	1.2%
White/Caucasian	75.0%	83.0%



Male	11.0%	11.0%%
Female	89.0%	89.0%

Discussion and Summary

One of the goals of the Health Careers Collaborative of Greater Cincinnati is to not only increase access to healthcare careers to underutilized labor pools, but to also increase the diversity of the healthcare workforce. In terms of racial diversity, the data shows that TriHealth’s recruitment of participants exceeds the expectation of this goal. Below is an overall summary of racial and gender diversity:

- 28.5% of participants in the HCC Cohort were comprised of black/African American employees while the control group, or those employees not in the HCC Cohort, consisted of only 17.0%.
- 44.0% of participants in the SAW Cohort were comprised of black/African American employees while the control group, or those employees not in the SAW Cohort, consisted of only 33.0%.
- 21.4% of participants in the PCA Cohort were comprised of black/African American employees while the control group, or those employees not in the PCA Cohort, consisted of only 13.8%.
- The participants in all three programs showed a higher percentage of Asian employees compared to those employees not participating in the programs.
- The participants in all three programs showed a higher percentage of Hispanic employees compared to those employees not participating in the programs.
- Even though these programs tend to recruit in employment sectors where there is already a strong mix of racial diversity, TriHealth’s commitment to the HCC mission is demonstrated by recruiting an even stronger mix of racial diversity.
- The gender diversity of participants of the three programs was nearly an equal proportion among those employees not participating in the HCC programs.
- These results depict TriHealth’s pledge to diversify the healthcare workforce of Greater Cincinnati.

Evaluation scores and Performance Counseling (Provided by Kim Lacinak and Keith Marsh)

Methodology

To compare the overall evaluation scores between participants in the three HCC programs versus those employees not enrolled in the programs, data was collected through



TriHealth’s Human Resources Department. The aggregate average of evaluation scores of participants on a scale of 5 (5 being the highest with 1 being the lowest) were collected for the PCA, SAW, and HCC Cohort group. To effectively compare these results, a control group of employees who did not or had not participated in the programs through HCC were identified. Therefore, the employees in the control group matched the job codes of employees in each of the three programs. The same methodology was conducted when analyzing the presence of performance counseling. Employees in both study populations were analyzed to determine the presence of performance counseling methods.

Table 11. Evaluation Scores and Performance Counseling for PCA groups

	PCA Treatment (n=71)	PCA Control (n=297)
Overall Evaluation Score Average	3.75	3.79
Average Evaluation Score With Performance Counseling	3.47	3.68
Average Evaluation Score Without Performance Counseling	4.12	3.92
Number with Performance Counseling	20 (28%)	102 (34%)
Number without Performance Counseling	51 (72%)	195 (66%)

Table 12. Evaluation Scores and Performance Counseling for SAW groups

	SAW Treatment (n=36)	SAW Control (n=1,054)
Overall Evaluation Score Average (Scale of 5)	3.74	3.73
Average Evaluation Score With Performance Counseling	3.30	3.53
Average Evaluation Score Without Performance Counseling	3.99	3.99
Number with Performance Counseling	13 (36%)	367 (34%)

Number without Performance Counseling	23 (64%)	698 (66%)
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Table 13. Evaluation Scores and Performance Counseling for HCC Cohort groups

	HCC Cohort Treatment (n=56)	HCC Cohort Control (n=3,676)
Overall Evaluation Score Average	3.96	3.82
Average Evaluation Score With Performance Counseling	3.83	3.69
Average Evaluation Score Without Performance Counseling	4.02	3.92
Number with Performance Counseling	20 (36%)	1,181 (32%)
Number without Performance Counseling	36 (64%)	2,495 (68%)

Discussion and Summary

In the analysis of the HCC programs’ impact on overall evaluation scores and performance counseling, a number of successful results can be concluded. The effectiveness of the PCA, SAW, and HCC Cohort can be shown by high evaluation scores and minimal rates of the presence of performance counseling:

- The participants of the PCA program had a lower amount of performance counseling (28%) than employees who did not participate in the program (34%).

- The participants of the PCA program who did not have any presence of performance counseling had higher evaluation scores (4.12) than the group of non-participants (3.92).
- The participants of the SAW program had nearly an equal amount of performance counseling compared to those employees who did not participate in the program.
- The participants of the SAW program boasted a higher employee evaluation score (3.74) than the group of employees who did not participate in the program (3.73).
- The participants of the HCC Cohort program had nearly an equal amount of performance counseling compared to those employees who did not participate in the program.
- The participants of the HCC Cohort program had an overall higher evaluation score average (3.96) than the group of employees who did not participate in the program (3.82)
- The participants of the HCC Cohort program who did not have any presence of performance counseling had higher evaluation scores (4.02) than the group of non-participants (3.92).
- The participants of the HCC Cohort program who actually received performance counseling boasted higher evaluation scores (3.83) than the group of non-participants (3.69).
- These results show an overall promising impact on employee performance. By participating in the HCC programs, employees at TriHealth understand what it means to work hard and to complete responsibilities. This is effectively shown in the strong evaluation scores from their respective managers.
- Additionally, these results show the work discipline that employees of the HCC programs exert on a daily basis by not obtaining higher rates of performance counseling compared to those employees who are not enrolled in one of the HCC programs.

Change in Pay Rate (Provided by Ben Frade and Keith Marsh)

Methodology

Change in pay rate was determined based on data provided by the Human Resources department. Initial pay and final pay were provided for each employee in the six groups examined. Following this, an algorithm in Microsoft Access (provided by Keith



Marsh) provided the change in pay for each individual. Percent change in this change in pay was then calculated. The results can be viewed in Table 14 below.

Table 14. Percent Change in Pay Grade for treatment and control groups.

	Number of Employees	Percent Change in Pay
PCA – Treatment	70	+4%
PCA – Control	297	+8%
SAW – Treatment	36	+16%
SAW – Control	1054	+10%
HCC Cohort – Treatment	56	+17%
HCC Cohort – Control	3676	+16%

Discussion and Summary

According to the results in Table 14, both the SAW treatment group and HCC Cohort treatment group yielded greater percent change in pay grade over time. This positive result may signify some of the positive effects of such programs for employees. The PCA group, however, yielded a lower percent change in pay over time. Such deviations could be attributed to less opportunity to change/improve one’s pay grade in such an occupation and less overall time between employee date of hire and assessment completion.

CONCLUSION & FUTURE STEPS



The purpose of this study was to determine whether TriHealth programs within the Health Careers Collaborative positively influence indicators of return-on-investment. A number of different indicators were examined, such as turnover rate, employee satisfaction, diversity, performance counseling, employee evaluation, and percent change in pay. While a variety of results were noted, some significant differences point towards the benefit of such programs. Positive results from this study included:

- Lower turnover rate for all groups participating in the Health Careers Collaborative programs
- Greater employee satisfaction in PCA and HCC treatment groups
- Greater diversity in all groups involved in the Health Careers Collaborative programs, such as an increased percentage of African Americans, Hispanics, and Asian Americans.
- High evaluation scores and minimal rates of the presence of performance counseling for those groups participating in the programs
- Greater percent change in pay over time for the SAW and HCC groups

With such positive results, we can further encourage organizations and employees to take part in such programs. These programs will assist employees in furthering their work potential and knowledge and decrease costs associated with turnovers and new hires. In regards to statistical significance, no testing could be completed due to the nature of data collection. Nonetheless, statistical experts at TriHealth's Hatton Research Institute indicated that the data portrayed the hypothesis of this research to be correct—the impact of HCC's three programs to be positive. Additionally, this proves the study groups (treatment and control groups) to be different, which provides meaningful support for the desired outcome of the HCC programs¹. This being said, there are no further steps that need to be taken.

¹ From Justin Gregg, Academic Research Supervisor , TriHealth's Hatton Research Institute