

Greater Cincinnati Workforce Network

Health Careers Collaborative of Greater Cincinnati Return On Investment Report: 2011

Analysis provided by The New Growth Group, LLC



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Health Careers Collaborative of Greater Cincinnati www.hccgc.org

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Summary

It is widely recognized in Greater Cincinnati that the quality and effectiveness of the workforce are key factors contributing to the region's economic future. In today's competitive economy, enhancing the skills of the current workforce, while creating opportunities for individuals to access good career tracks is viewed as an imperative. The Health Careers Collaborative of Greater Cincinnati, or HCC, is a career pathways partnership that has been operating successfully in the healthcare field since 2004 with dual objectives to create opportunities for individuals while benefiting employers. This report seeks to determine the net benefits received by employers as a result of participation in the HCC partnership.

The first analysis considers the costs and benefits for one large employer, UC Health, from training low-skilled incumbent workers for occupations requiring associate degrees. The analysis considered 90 employees who participated in HCC's Associate Degree Cohort program from 2005 extrapolated through the expected completion of currently enrolled cohorts in 2013. The total present discounted value of costs is \$1.82 million, mostly attributable to tuition payments and the cost of backfilling positions when participants are promoted. The expected benefits are approximately \$2.04 million, mostly attributable to recruitment cost savings when the employees complete training and are promoted to in-demand occupations. The net return is estimated to be \$216,137, giving a return-on-investment (ROI) of 11.9%. We believe that this provides a reasonable estimate on the ROI that an employer can anticipate from participation in the HCC.

The second analysis finds a significant benefit to employers as a result of certificate training programs provided by HCC – and for which there are very few employer costs due to the partnership's leveraged grant funding. HCC's certificate training, which prepares individuals for entry-level healthcare occupations requiring certificates below the associate degree, provides substantial returns to employers by reducing turnover and recruitment costs. The net benefit to the employer per HCC participant hired is approximately \$4,869, with lower turnover and reduced recruitment costs each making up about half of the benefits. The employer's costs are about \$102 per hired participant due to a small administrative burden and a slightly higher absentee rate attributable to program participants relative to a matched comparison group. While the benefits per hired participant are modest, because of the large scale of the program (525

employees between 2005 and 2010) the present discounted value of the net benefits from the certificate program is over \$2.6 million.

Finally, there are several benefits accrued by UC Health that are not quantifiable in monetized terms. These are: improved job performance among pathways participants, increased diversity of the workforce, and improved fulfillment of the organization's community service mission.

Introduction

In today's uncertain economy, it is widely recognized in Greater Cincinnati that workforce quality and effectiveness are key factors affecting the region's economic future; addressing the challenge of enhancing the skills of the current workforce while creating opportunities for disconnected individuals to access good career tracks is viewed as an imperative. Many individuals in the region are challenged to attain the academic or professional skills necessary to acquire family-sustaining work. At the same time, employers are in need of skilled workers, particularly in middle-skill occupations.

The Greater Cincinnati Workforce Network (GCWN) was formed in 2008—bringing together public, private, philanthropic, and community-based organizations from eight counties in the southwest Ohio, northern Kentucky, and southeast Indiana tristate region—to frame a common agenda that marshals the strengths of the participating organizations in order to improve the skills of the regional workforce. GCWN seeks to foster a regional workforce development system that overcomes the disjointed nature of the current landscape and meets the needs of employers and individuals. One principal activity that GCWN supports is the development of career pathways. A career pathway is a stepwise series of education and training programs, linked with employment opportunities, that enables individuals to attain employment and advance incrementally over time. The career pathways strategy seeks to: 1) address employers' occupational shortages by creating opportunities for low-skilled individuals to attain employment and advance above the entry level into high demand occupations; 2) offer a framework for bringing together regional partners and employers.

The Health Careers Collaborative of Greater Cincinnati, or HCC, is a career pathways partnership that has been operating successfully in the healthcare field since 2004. Its guiding members include four of the largest hospital systems in the region, representing more than half of

regional healthcare employment. The initiative has been so successful that GCWN has drawn upon the expertise and experiences of HCC to replicate the approach in the construction and manufacturing sectors while providing ongoing support of HCC's efforts through fundraising assistance and technical assistance support. HCC's objectives are to 1) create avenues of access to healthcare careers for underutilized labor pools, including lower wage incumbent workers and unemployed or underemployed individuals, 2) alleviate healthcare workforce shortages, and 3) increase the diversity of the healthcare workforce in Greater Cincinnati.

This report, developed with support from GCWN, seeks to determine the net benefits received by employers as a result of participation in the HCC partnership.

Health Career Collaborative Career Pathways Description

The HCC partnership endeavors to understand the workforce needs of employers, coordinate education and training programs to meet those needs, and to provide support services for participants leading to advancement in health care employment. The collaborative has eight primary partners:

- Cincinnati Children's Hospital and Medical Center
- UC Health
- TriHealth, Inc.
- Mercy Health Partners
- Cincinnati State Technical and Community College
- Dress for Success Cincinnati
- Great Oaks Career Campuses
- Mercy Neighborhood Ministries

Incumbent and unemployed workers are eligible participate in programs. As noted in Table 1 below, HCC enrolled 542 individuals in the first three quarters of 2010.

Table 1: Participants March 2010 – Dec 2010

Category	Number (Percent)
Began to Receiving Education/ Training	542 (100%)
Earned Certificate or Degree	432 certificates earned (80% of total education/training enrollees)
Unemployed	240 (44%)
Minority	202 (37%)

Best Practices Driving the Initiative

Participating organizations cite several noteworthy aspects of this career pathways program as important to the initiative’s success:

- Pre-pathway assessment and remediation

Prior to entering the pathway, all participants are assessed to determine readiness for undertaking academic course work. For those pursuing a certificate credential, a score of 4 in reading, writing and applied math is required on the Key Train assessment. Individuals that do not meet this requirement are referred to tutoring offered by partners. For incumbent frontline workers seeking to enter the Associate Degree Cohort program, the Compass® placement exam assesses readiness to commence college level coursework. Ninety percent of cohort participants require at least one developmental education class; as such the core curriculum allows for two terms of developmental education prior to commencing college coursework. Employers have modified existing tuition advancement policies to pay for the developmental education coursework. The HCC has started to pilot the National Career Readiness Credential (NCRC) and the NCRC Profile + Assessment to aid participants in determining whether a career in healthcare is a good fit for their skills and abilities.

- Cohort Learning Communities

Once enrolled, all students—including those in entry-level certificate, advanced certificate, and associate degree programs—are placed in cohorts comprised of students pursuing the same credential. Cohorts take all classes together through the end of their programs. The cohort model creates a sense of collegiality, support, and positive peer pressure among students, which the partnering organizations believe increases program retention.

- A Core Curriculum and Contextualized Learning

A sequential core curriculum is used for the associate degree cohorts; sections for each course are reserved for HCC students only. Additionally, the HCC partners have developed unique course offerings as part of this curriculum. *Professionalism in Healthcare* is team taught by Cincinnati State faculty and Dress for Success Cincinnati and focuses on the professional expectations of jobs above the entry level and to the rigors of postsecondary learning. Additionally, a two course sequence was developed to offer contextualized introductory college math and chemistry for HCC students, the majority of whom assessed low in math and science on the Compass®. All HCC Associate Degree Cohort program students take these courses during their first two terms.

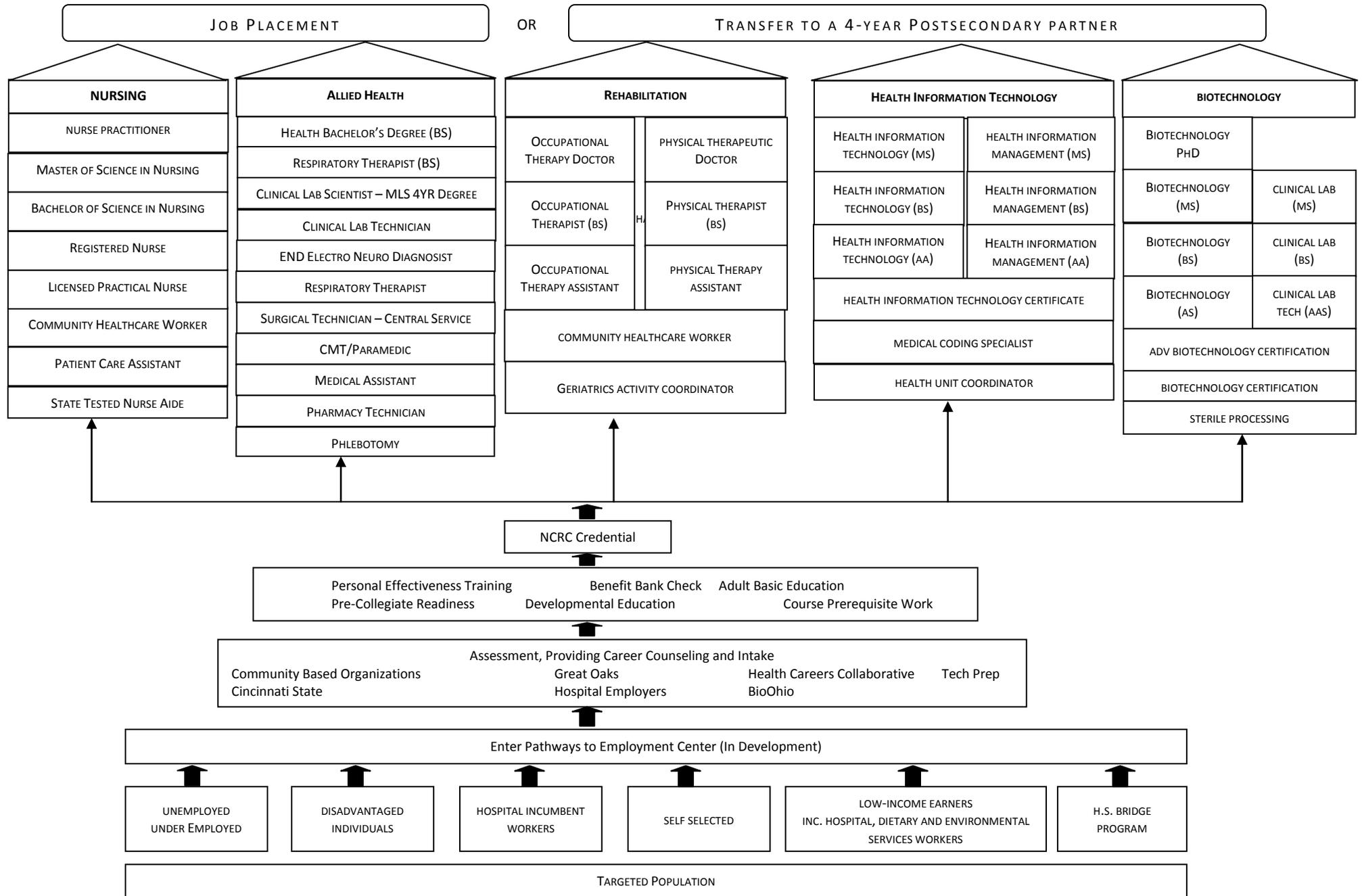
- Up-front employer tuition assistance

As a condition for participation in the collaborative, employers are required to provide up-front tuition assistance to students enrolled in the Associate Degree Cohort program. Prior to joining the HCC, all of the employer partners offered tuition assistance on a reimbursement basis, which required students to use their own money for school enrollment—a significant barrier for many low-income individuals.

- No waiting lists for clinical opportunities

Students enrolled in HCC Associate Degree Cohort programs that have clinical requirements are prioritized for clinical placements. The typical waiting list for clinical training can be one to two terms for the general student population. The ability of an HCC student to advance to clinical without being waitlisted enhances retention.

The career pathways programs, depicted in the chart on page 7, are comprised of assessments, entry-level and advanced certificates and associate degrees in nursing, allied health, rehabilitation, health information technology, and biotechnology disciplines. There is an entry-level requirement for all participants to have at least a high school degree or equivalency. As such, the collaborative includes partners that provide basic skills and GED services to individuals who do not meet the minimum educational requirement for certificate training.



Analysis #1: Return-on-Investment for Associate Degree Cohort Program

At the request of Greater Cincinnati Workforce Network (GCWN) and HCC, we created an estimate of an employer's ROI from participating in the HCC associate degree programs, referred to locally as the Associate Degree Cohort program. UC Health volunteered to provide data and guidance for the analysis. This report summarizes the findings to date. Data from additional employers and comments from stakeholders in the future may enhance the ROI estimate.¹ The costs and benefits estimates cover the cohorts that have already begun and run through 2013, the expected completion date of the most recent cohort. In total, 90 individuals were included in the analysis. We do not account for future cohorts, the inclusion of which will increase the ROI. The analysis of HCC's short-term training programs is conducted separately.

Factors and Assumptions

Table 2 describes the factors used to calculate ROI for the Associate Degree Cohort program.

Table 2: Factors that were incorporated in calculating the ROI

<u>Costs</u>	<u>Benefits</u>
<ul style="list-style-type: none">• Administrative costs borne by employers• Tuition payments• Increase in absences during training• Cost of hiring replacements for current positions when participants complete and are promoted (backfilling)	<ul style="list-style-type: none">• Reduction in turnover during training• Lower hiring and training costs of promoted workers when compared to outside hires

To estimate the ROI, several assumptions were made. Absence and recruitment costs were estimated based on prior industry studies combined with data on the average pay in the Cincinnati metropolitan area for each relevant occupation from the Bureau of Labor Statistics (BLS). Although there is no reason to believe this is a notable threat to the results, it may be that UC Health has different costs than the industry studies and the BLS data suggest. An additional

¹ Note: We have discussed whether ROI is the best way to describe this analysis given that not all benefits are able to be monetized. While we retained the use of the term ROI because of the focus on monetary considerations, "value assessment" is another term that was discussed.

limitation is that there may be administrative costs that are unaccounted for, although the administrative costs reported by employers are included.

Several other limitations and assumptions are noted. It is assumed that 80 percent of people who begin the degree program successfully earn their degree and become qualified to advance. While the program administrators believe this is a reasonable estimate, to date there is no hard data available about completion rates. Another estimated factor is how much monetary benefit employers derive by hiring HCC participants as opposed to other qualified applicants. This analysis assumes that the cost of recruiting participants and their post-promotion training is three-quarters of other hires. We believe this is a reasonable estimate because the majority of participants are incumbent workers who already have substantial in-house experience, which we believe reduce on-boarding costs. In addition, employers provide direct input to the training program, which serves to reduce post-placement training. There is an implicit assumption that all the participants stay with their current employer after degree completion. If substantial numbers of completers are hired by other employers the estimate of the employer's ROI would be affected.

Another limitation of the study is that we cannot estimate post-promotion differences in performance and turnover for the participants of the degree program. It is implicitly assumed that program participants are equally good and long-tenured as other hires for the same positions. Depending on how one looks at it, this assumption could lead to the ROI estimate being too high or too low. If the program participants are not as effective on their job as the typical outside hire, perhaps due to differences in job experience or preparation, then the ROI estimate would be too high. If the program participants have lower turnover than the typical outside hire, perhaps due to loyalty to the employer who helped them advance or due to the fact that they have already been employed with the same employer for at least 4 years, then the ROI estimate would be too low. This ambiguity cannot be resolved until there have been a large number of program completers who have been promoted.

A final limitation is that we rely on matching estimates and such estimates are only unbiased if there are no unobservable characteristics that influence the outcomes we study. However, we are able to match participants to a comparison group on a number of important variables, such as absence rates and evaluation scores, which reduces our concern about this limitation. Additional assumptions are included in Table 3 on page 11 below.

Table 3: Additional assumptions for the Associate Degree Cohort program analysis

Assumption	Notes
There will be no additional cohorts, but current participants will complete in the same manner as past cohorts.	This analysis is concerned only with the 90 participants who entered the Associate Degree Cohort program after 2004.
10% of participants drop out after year 1 and 10% of initial participants drop out in year 2.	Have no data on frequency or timing of dropping out. 80% completion rate is believed to be a conservative estimate.
Participants need 154 credit hours (142 required and 12 remedial).	We do not have data to come up with a precise estimate of the number of remedial classes needed. Assume that on average half of possible remedial classes are needed.
Participants complete the program in 4 years.	Based on tuition cost report from Cincinnati, State.
Credit hours cost \$80.20 prior to 2010 and \$83.00 2010 and after.	Based on tuition cost report from Cincinnati, State.
The average cost of 8 hours of unplanned absence is \$212.	Based on assumption that cost of an absence is 1.75 times the cost of wages paid to worker for that time. This is mid-way between a high and low estimate of cost of an absence in the healthcare sector. Also based on earnings in initial occupations. ²
The average cost of a turnover or backfilling prior position is \$9,000.	Based on average annual earnings from the 2009 Occupational Employment Statistics for Cincinnati for participant's occupations at the start and assuming turnover/backfill cost of 30% of annual earnings. 30% chosen based on occupations employed in and a 2002 VHA study. ³
The average savings in recruitment and training cost when a worker advances to a new occupation is \$24,438.	Based on average annual earnings from the 2009 Occupational Employment Statistics for Cincinnati for occupations participants are training for and assuming that recruitment and training costs are equivalent to 65% of annual salary for RNs and 50% of annual salary for all other occupations. The percents based on 2002 VHA study. ⁴ Also assume that the cost of recruiting and training a participant is 25% of the cost of hiring someone else for the position because of reduced recruitment and training costs.
The discount rate is 3%.	Used to get present discounted value of past and future benefits.

ROI Calculation

Using individual-level data with names removed, program participants were matched with similar employees who were not involved in the program. Matches were chosen based on date hired, performance evaluation in year prior to program start, absence rate prior to program start, occupation, and hospital where employed. Primarily due to missing data, not all participants were able to be matched. Table 4 summarizes our findings on the differences in pre-

² VHA, Inc., *The Business Case for Workforce Stability*, Irving, Texas. 2002

³ Ibid

⁴ Ibid

promotion turnover, absences, and performance evaluations between participants and other similar employees. Participants have 24 percent lower turnover after two years, approximately 1 day more of absences, and similar evaluation scores. Note that none of the differences are statistically significant.

Table 4: Matching estimates of differences during training in turnover, absences, and evaluation scores between HCC participants and other similar employees

	% still employed at end of year		Hours absent		Evaluation score	
	1st year	2nd year	1st year	2nd year	1st year	2nd year
Participants	86.4%	86.7%	46.8	43.9	364.8	344.0
Matches	84.1%	70.0%	37.1	35.4	349.6	350.3
Difference	2.3%	16.7%	9.8	8.6	15.2	(6.3)
% Difference	2.7%	23.8%	26.4%	24.2%	4.4%	-1.8%
Sample size	44	30	34	30	29	20

Most costs and all benefits depend on the number of participants. As such, we used data on the size of the cohorts to calculate the costs and benefits for each year. The largest two sources of per participant costs are tuition (totaling approximately \$12,566 per participant) and the cost of filling the participant’s prior position (approximately \$9,000 upon completion of the program). Prior to March 2010, employer partners assumed administrative costs associated with the internal management of the HCC participants and collaborative work borne by employers. After March 2010 grant funding offset the cost of an employer job coach/retention specialist dedicated to working with HCC participants, however, there are still unreimbursed administrative expense borne by each employer that is now documented and captured as leverage against grant funding. The two sources of per participant benefits are reduced cost of filling their new position when the participants complete the program (\$24,438 per completer) and reduced turnover while in the program (\$2,214 per completer). We counted no other sources of benefits, either due to a lack of data (e.g. post-promotion turnover differences) or because it was not possible to assign a dollar value (e.g. job performance improvement). We suspect that if these were quantified, they would be small relative to those already included.

Based on these costs and benefits, the size of each cohort, and the assumptions above, we calculated the annual costs and benefits of the HCC program from 2005 through 2013. We then calculated the present discounted value of these estimates. Finally, we compared the sum of the costs and benefits to generate the ROI. ROI is defined as (Total benefits – Total costs)/(Total costs). See Table 5 below for the annual cost and benefit estimates and the total ROI.

This estimate assumes that the cost of refilling the prior position of an employee who has completed training and has been promoted averages \$9,000. This backfill cost estimate is derived based on the typical wages of those occupations in the Cincinnati region and the industry standard assumption that the hiring and recruiting costs of an entry-level position are 30 percent of the positions annual salary.

Table 5: Cost and benefit estimates and ROI for the Associate Degree Cohort program

	Nominal		Adjustment for time	Time adjusted	
	Costs	Benefits		Costs	Benefits
2005	\$ 27,804	\$ 1,440	1.20	\$ 33,380	\$ 1,729
2006	\$ 52,829	\$ 11,160	1.16	\$ 61,519	\$ 12,996
2007	\$ 127,205	\$ 19,390	1.13	\$ 143,687	\$ 21,902
2008	\$ 198,360	\$ 197,543	1.10	\$ 217,340	\$ 216,445
2009	\$ 280,383	\$ 193,151	1.06	\$ 297,995	\$ 205,284
2010	\$ 397,443	\$ 514,988	1.03	\$ 409,735	\$ 530,916
2011	\$ 200,543	\$ 178,632	1.00	\$ 200,543	\$ 178,632
2012	\$ 363,734	\$ 679,189	0.97	\$ 352,822	\$ 658,813
2013	\$ 110,734	\$ 223,862	0.94	\$ 104,189	\$ 210,632
Total				\$ 1,821,211	\$ 2,037,348
Net benefits				\$ 216,137	
ROI					11.9%

Analysis #2: Net Benefits of Certificate Program Pathways

The second analysis, which encompasses 525 certificate program completers, looks at the benefits received by employers as a result of HCC's certificate programs. This analysis is not conceptualized as an ROI because employers incur very few costs.

Factors and Assumptions

Using data from a database of HCC program participants and employee records provided by UC Health, we matched participants in HCC's certificate training programs to other employees hired for similar positions between 2005 and 2010. Because no information is available about the other hires prior to their hire date, we match on three attributes: facility where the individual works, occupation, and start date.

One challenge in this analysis is that we have been unable to measure when people started or completed training. Some of the training participants worked for UC Health prior to the training, but because we believe that including employees with substantial job tenure prior to training would overstate the effects of the program, we use only participants and matches hired since the beginning of 2005, when the program began. We also exclude anyone who participated in the Associate Degree Cohort program because it would not be possible to distinguish the effects of the certificate program. We generated separate estimates where we exclude from the sample anyone who was an employee of UC Health when they entered the training program. While incumbent participants had lower turnover, the differences between the non-incumbent participants and their matches are similar to the results presented below in Tables 7 and 8. We find matches for 462 of the 525 participants in the certificate training program who worked for UC Health at some time.

HCC participants were compared to their matches on measures of turnover, absenteeism, and evaluation scores. The principal occupation held by participants, Patient Care Assistant, is a high turnover job; annual turnover in our data exceeded 50 percent for program participants and matches. As a result, we examined weekly absence rate (averages hours absent per week), which was then extrapolated to determine annual hours absent. The sample size for the evaluation score analysis is less than half that of the other analyses because many employees did not have enough time on the job to have received an evaluation.

There are two primary limitations for the certificate program analysis. First, it was assumed that the cost to employers of recruiting and training program participants was 25 percent lower than the cost of recruiting and hiring through other means. We made this assumption based on the fact that the program’s recruiting and screening processes assume a portion of the employer’s recruitment and screening costs and because the employer had direct input into the training program, which should reduce the cost of post-hire training. The other limitation specific to the certificate program is we match program participants with other hires based solely on occupation, employer site, and hire date – a much more limited set of variables than was used with the Associate Degree Cohort program. Because of this, there is an elevated risk that the matches are systematically different from the program participants in ways we cannot observe. However, it is important to note that these matches are drawn from people who were hired by UC Health and therefore should be similar to other non-program participant hires. Additional assumptions are provided in Table 6.

Table 6: Additional assumptions for the certificate program ROI analysis

Assumption	Notes
The average cost of 8 hours of unplanned absence is \$175.90	Based on assumption that cost of an absence is 1.75 times the cost of wages paid to worker for that time. This is mid-way between a high and low estimate of cost of an absence in the healthcare sector. Also based on average earnings by occupation from the 2009 Occupational Employment Statistics for Cincinnati.
The average cost of a turnover or backfilling prior position is \$7,511.40	Based on average annual earnings from the 2009 Occupational Employment Statistics for Cincinnati for participant's occupations and assuming turnover cost of 30% of annual earnings. 30% chosen based on the occupations covered and a 2002 VHA study. ⁵
The average savings in recruitment and training cost when a short term training participant is hired is \$3,128.76	Based on average annual earnings from the 2009 Occupational Employment Statistics for Cincinnati for occupations participants work in and assuming that recruitment and training costs are equivalent to 50% of annual salary for all these occupations. The percents based on 2002 VHA study. ⁶ Also assume that the cost of recruiting and training a participant is 75% of the cost of hiring someone else for the position because of reduced recruitment and training costs.
The discount rate is 3%	Used to get present discounted value of past and future benefits.

Sources of Costs and Benefits

⁵ VHA, Inc., *The Business Case for Workforce Stability*, Irving, Texas. 2002

⁶ Ibid

Three factors were considered in calculating the net benefits of the program: reduction in turnover costs, reduction in recruitment costs, and increase in absence costs. The following tables show the estimates of the differences between participants and their matches in these three factors in the first two years of employment. Table 7 provides an analysis for incumbent workers and non-incumbents pooled together; Table 8 examines incumbent workers only. These estimates show that retention is low for both the participant and matched groups (approximately 48 percent of participants are retained after 12 months of employment compared to approximately 37 percent of matched individuals). Participants have slightly higher absences, but perform slightly better on performance evaluations. Only the differences in retention rates are statistically significant.

Table 7: Matching results with incumbents and non-incumbents pooled

	% still employed at end of:				Hours absent		Evaluation score	
	6 months	1st year	18 mos.	2nd year	1st year	2nd year	1st year	2nd year
Participants	70.6%	48.8%	35.5%	22.9%	1.9	5.9	320.2	332.5
Matches	58.4%	36.7%	22.8%	13.1%	1.8	5.9	313.8	329.5
Difference	12.1%	12.1%	12.7%	9.8%	0.1	0.0	6.4	3.0
% Difference	20.7%	33.1%	55.6%	75.0%	3.6%	0.5%	2.0%	0.9%
Sample size	462	428	394	336	392	221	146	63

Table 8: Matching results for only non-incumbents

	% still employed at end of:				Hours absent		Evaluation score	
	6 months	1st year	18 mos.	2nd year	1st year	2nd year	1st year	2nd year
Participants	69.3%	47.7%	34.1%	19.2%	2.0	6.4	316.3	325.6
Matches	60.6%	37.0%	23.7%	11.6%	2.1	6.5	312.9	322.2
Difference	8.7%	10.7%	10.4%	7.6%	(0.1)	(0.1)	3.4	3.3
% Difference	14.3%	28.9%	43.9%	65.4%	-5.1%	-1.2%	1.1%	1.0%
Sample size	335	308	279	224	287	162	108	47

Summarizing the Net Benefits

Using the same process for aggregating and discounting the costs and benefits of certificate programs that was used for the Associate Degree Cohort program, we generated Table 9. The net benefits are very high because the employer's costs from the program are low. The small employer-born costs that exist are the result of participants having slightly higher absentee rates and a small administrative burden. This analysis is not considered an ROI analysis because employers have contributed very little investment. Rather it is an example of how regional workforce partners can simultaneously serve low-skilled workers while providing a noteworthy benefit to employers.

The net benefit to the employer per HCC participant hired is approximately \$4,869, with lower turnover and reduced recruitment costs each making up about half of the benefits. Because the employer has only a small administrative cost associated with this program, the employer's costs are about \$102 per hired participant with the cost of slightly higher absenteeism in the first two years after program completion.

We note the odd appearance of low and negative costs associated with the program in years 2011 through 2013. This is due to the fact that we are not counting any new participants after 2010, so the only costs in 2011, 2012, and 2013 are absence-related costs for already-enrolled participants – in other words, administrative costs are removed. In the first two years after hire, participants had more absences than matched hires. In the third and fourth years after being hired, the participants have fewer absences than other hires – the difference in absences becomes a benefit over time. In 2012 and 2013, there will be enough participants who have been on the job for a long time that the absence costs become benefits and appear in the table as negative numbers. We assume that there are no differences in absences after the fourth year.

Table 9: Employer’s costs and benefits for the certificate program

	Nominal		Adjustment for time	Time adjusted	
	Costs	Benefits		Costs	Benefits
2005	\$ 2,830	\$ 64,678	1.20	\$ 3,398	\$ 77,647
2006	\$ 8,120	\$ 187,670	1.16	\$ 9,455	\$ 218,543
2007	\$ 33,703	\$ 778,435	1.13	\$ 38,070	\$ 879,297
2008	\$ 24,821	\$ 600,840	1.10	\$ 27,196	\$ 658,330
2009	\$ 18,493	\$ 473,055	1.06	\$ 19,655	\$ 502,769
2010	\$ 10,653	\$ 301,206	1.03	\$ 10,983	\$ 310,522
2011	\$ 219	\$ 44,757	1.00	\$ 219	\$ 44,757
2012	\$ (266)	\$ 15,799	0.97	\$ (258)	\$ 15,325
2013	\$ (153)	\$ 4,504	0.94	\$ (144)	\$ 4,238
Total				\$ 108,575	\$ 2,711,427
Net benefits				\$ 2,602,852	

Combined Net Benefit of HCC Programs

We combine the estimates from the certificate program and the Associate Degree Cohort program and find a net benefit of \$2,818,990. As stated above, there is an assumption that employers receive a 25 percent recruitment cost savings resulting from savings due to prescreening by HCC partners and the ability of the employers to influence the training, which would reduce the on-the-job training required of HCC participants. While we believe this is a reasonable estimate, if we assume that the certificate program does not reduce the employer’s recruitment and training costs, then the net benefit would fall to approximately \$800,000.

Table 10: Combined Net Benefits of the HCC Program

	Nominal		Adjustment for time	Time adjusted	
	Costs	Benefits		Costs	Benefits
2005	\$ 30,635	\$ 66,118	1.20	\$ 36,778	\$ 79,376
2006	\$ 60,948	\$ 198,830	1.16	\$ 70,974	\$ 231,539
2007	\$ 160,909	\$ 797,825	1.13	\$ 181,758	\$ 901,199
2008	\$ 223,181	\$ 798,383	1.10	\$ 244,536	\$ 874,775
2009	\$ 298,876	\$ 666,207	1.06	\$ 317,650	\$ 708,053
2010	\$ 408,097	\$ 816,194	1.03	\$ 420,718	\$ 841,438
2011	\$ 200,762	\$ 223,389	1.00	\$ 200,762	\$ 223,389
2012	\$ 363,469	\$ 694,988	0.97	\$ 352,565	\$ 674,138
2013	\$ 110,581	\$ 228,366	0.94	\$ 104,045	\$ 214,870
Total				\$ 1,929,786	\$ 4,748,775
Net benefits				\$ 2,818,990	

Intangible Benefits

Employers in HCC indicated several important benefits that have not been included in the ROI analysis because they are incalculable in dollar terms. These include:

- Increasing diversity of staff
- Providing advancement opportunity for staff
- Improved staff morale
- Fulfillment of the community service mission of the hospital

In conclusion, HCC’s career pathways are highly beneficial to employers. We believe that the 11.9 percent ROI derived from the Associate Degree Cohort program is a conservative estimate that is generalizable to the other hospitals involved in HCC. It is likely generalizable to initiatives in other settings. Overall, when the certificate program is included in the analysis, there is a tremendous benefit to employers amounting to over \$2.8 million. If the overall benefits, including the benefits derived from the certificate program, relative to costs were calculated as an ROI, it would amount to 146 percent. This 146 percent result, while highly favorable, may not be generalizable to other settings due to the high reliance on grant subsidized fund covering the cost of training and administration. Regardless, the HCC model clearly demonstrates the potential for public/private partnerships to produce tremendous benefits for employers.