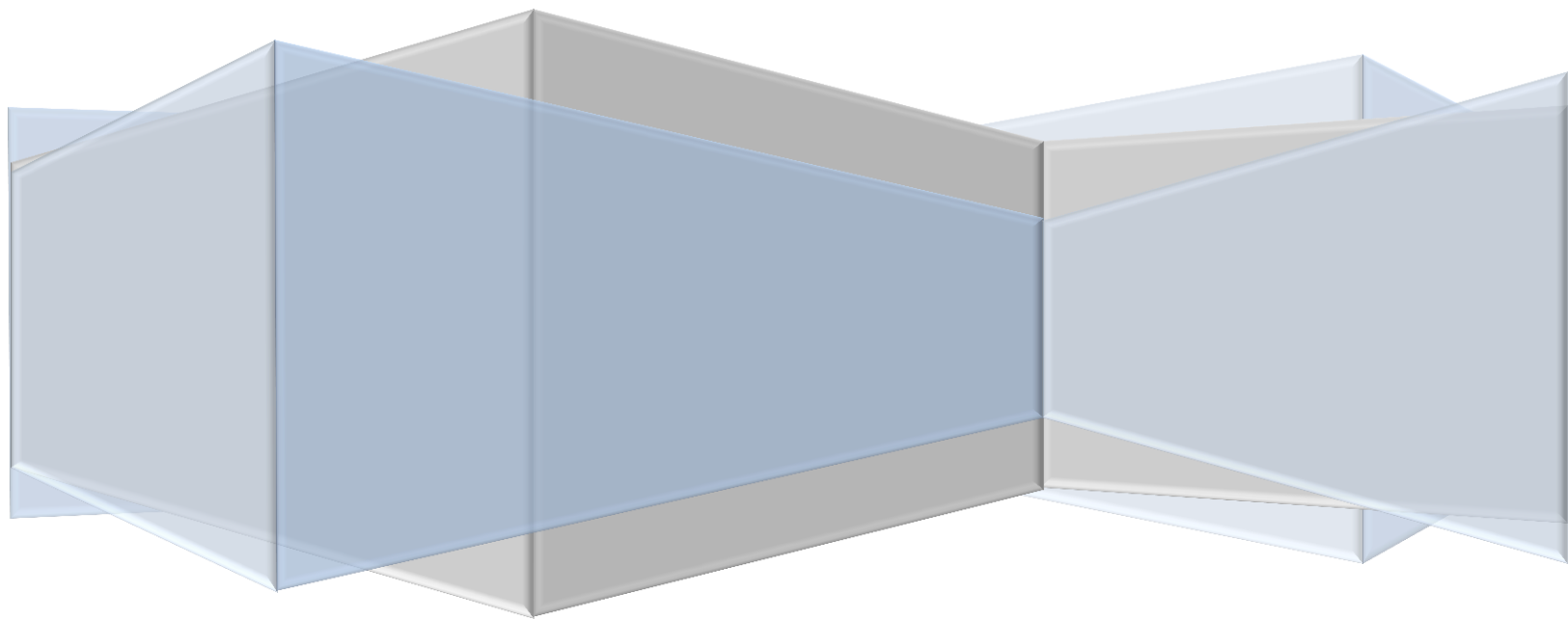


# Nassau County Wellness Report

Report on the various Nassau County Hospitals' Programs based on the Wellness Survey

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## Nassau County Hospitals' Programs

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Nassau County has two hospitals contributing to the Long Island Health Collaborative's Wellness Survey but 80% of respondents are from their programs. Winthrop University Hospital holds the *Active Living* program and St. Francis Hospital holds the *Heart Health*, *Chronic Lung Disease*, *Diabetes Education*, and *Diabetes/Weight Loss* programs. The *Active Living* program is a four-part wellness series geared toward seniors or anyone affected by a chronic condition. The program addresses the general management of health conditions, explains the mind/body connection, discusses proper nutrition and demonstrates safe exercises. The *Congestive Heart Failure Program* offers a comprehensive approach to diagnosis and management of all stages of heart failure. This program meets 3 times a week for 12 weeks. The *Chronic Lung Disease* program helps people with emphysema, chronic bronchitis, or complicated asthma live as fully and independently as possible by providing alternatives beyond medication. Specialists work to improve physical fitness, reduce hospitalizations, and lessen the impact of lung disease. The *Diabetes Education* program is a comprehensive educational program for non-insulin and insulin dependent persons with diabetes and their families, emphasizing knowledge of disease, treatment, self-management, and awareness of possible complications and prevention. The *Diabetes/Weight Loss* program is an 8 week program where participants meet with a nutritionist for one hour. There is a weigh in every week to see improvement in eating habits of the participants.

## Analysis

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In Nassau County there were a total of 517 participants that attended a program and completed the survey. Of these 517, 461 of them (89%) completed the pre and the post survey. In order to determine whether an individual improved their knowledge of healthy living post-program we compared the sum of responses for question 5 between pre and post survey responses. Question 5 includes 27 parts related to Nutrition, Psychological Well Being, Exercise, and Responsible Health Practice.

### Percent Positive

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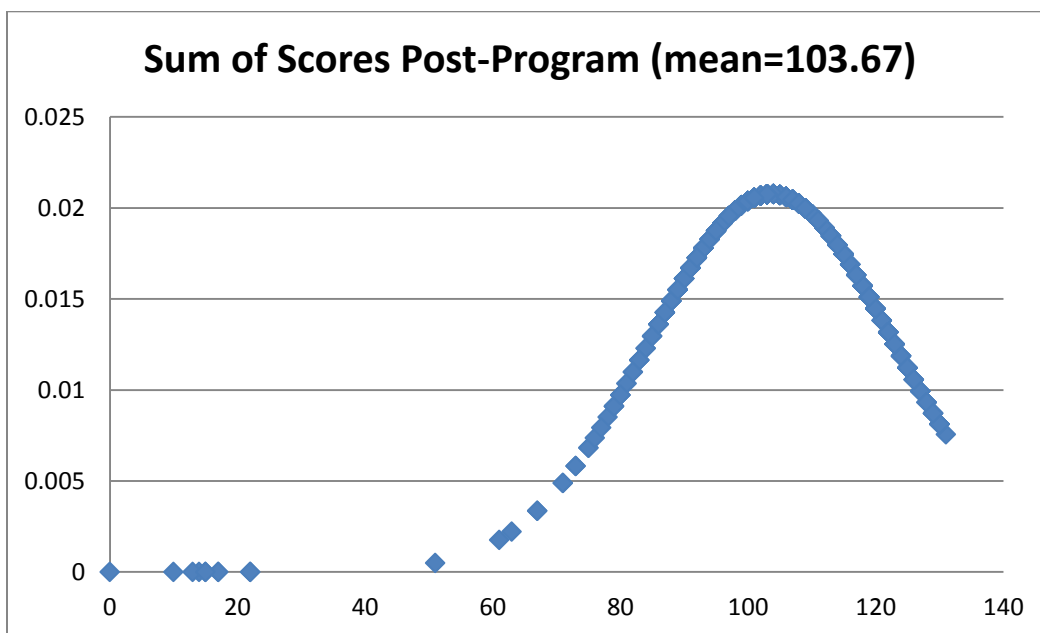
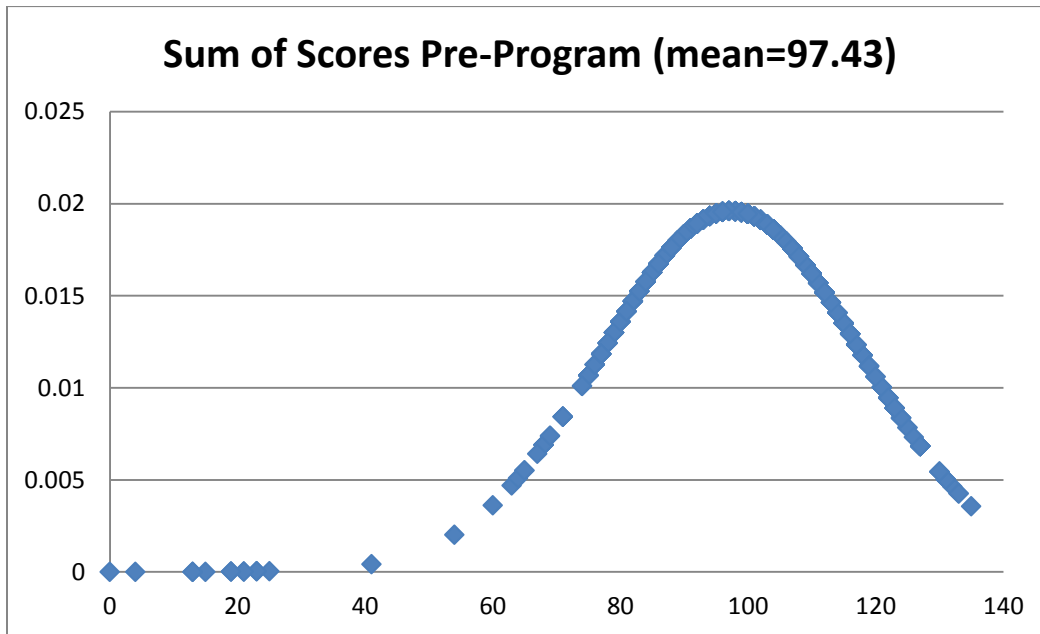
This table shows the average Percent Positive change from pre-program survey responses to post-program survey responses. When an individual answered a question with "Always" or "Often" it is considered a positive response.

Difference in Percent Positive			
Nutrition	Psych Well Being	Exercise	Responsibility
5.820%	5.072%	18.319%	4.097%

## Normal Distribution

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The following two graphs show that the pre-program and post-program sums of scores are normally distributed. “A normal distribution is a very important statistical data distribution pattern occurring in many natural phenomena. Certain data, when graphed as a histogram, creates a bell-shaped curve known as a normal curve, or normal distribution. Normal distributions are symmetrical with a single central peak at the average of the data. Fifty percent of the distribution lies to the left of the average and fifty percent lies to the right of the average.”<sup>1</sup>



<sup>1</sup> <http://www.regentsprep.org/regents/math/algtrig/ats2/normallesson.htm>

The distribution of sums of scores appears to resemble the desired “bell curve” where the data is centered about the mean. Although there are several outliers, this information can still be considered statistically valid.

### Paired Sample T-Test

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Since the sums of scores are approximately normally distributed we can perform a Paired Sample T-Test. “A Paired Sample T-Test is used to determine whether there is a significant difference between the average values of the same measurement made under two different conditions. Both measurements are made on each unit in a sample, and the test is based on the paired differences between these two values.”<sup>2</sup> After performing the test it was clear that the difference between the average values of the sum of question 5 was significant, meaning that a difference in pre-program and post-program is statistically valid.

Significance with Outliers	Significance without Outliers
5.69034E-10	4.43818E-26

### Conclusion

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When we look at the programs taking place at the participating hospitals in Nassau County we find that the participants are being impacted in a positive way. After enrolling in the programs, they are responding more positively to questions regarding their health. When looking at the *Difference in Percent Positive* we find that every category has a positive change. When we look at this measure for each question we find that two of twenty seven questions saw a lower percentage of positive responses. Based on the results from this survey, participants learned of the benefit of exercise and how it can truly make a difference.

These results are reinforced by the overwhelming statistical validity. The *T-Test* proves that there is a clear significance between the difference in pre-program and post-program sums of scores. Due to the limitations of the *T-Test* we do not know if this significance is for the better or for the worse but we can use the results from the *Difference in Percent Positive* to show that this difference is in the right direction. Combine the results of the *T-Test* with the scatter plot of the *Normal Distribution* and we find that the survey responses of the 461 participants are statistically valid.

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<sup>2</sup> <http://www.stats.gla.ac.uk/glossary/?q=node/355>