Diabetes within Two Pueblos

New Mexico
Supercomputing challenge
Final Report
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Table of Contents

Executive Summary

Diabetes is a major problem in our communities of Santo Domingo and San Juan (Okay Owingeh). There has been an increased rate of people getting diabetes and most aren't doing anything about it. Some of our community members do not even know that they have diabetes and continue to live unhealthy life styles. Other community members are not receiving the proper medical attention needed to treat diabetes because there are no hospitals located closer to the pueblos. The death rate from diabetes is increasing. This is a disease that all native people deal with.

The first step we took in starting a project was research and understanding the problem we wanted to address. We conducted research on this disease and contacted the health clinics in both our pueblos. The Indian Health Hospital in Santa Fe helped us get some statistics for our project. We put together a star logo model using our research on diabetes. We also used the survey we conducted. Our findings were not very positive. Our model showed us what could happen if diabetes is not dealt with immediately.

Introduction

Our project is on the effects of diabetes within two pueblo communities. We chose to do this project on Diabetes because it is a major issue in our pueblos as well as across the United States. It has spread like wild fire though Indian country and we wanted to research something that was meaningful to us. Growing up in a pueblo community you see all the things that affect your people. What we have seen as major medical problem has become even more problematic because the vast majority of our community members are suffering everyday with diabetes. Each day there are more Native Americans being diagnosed with this disease. By doing a project on a major issue in our pueblos, such as diabetes, we thought that our findings at the end of our project would help our two pueblos.

The Indian Health hospital treats most of our community members and everyday they see more and more people come in with a variety of health problems that are caused by diabetes. Diabetes causes:

- Blindness
- Increased levels of sugar in blood
- No circulation in limbs
- Liver failure
- Amputation of limbs
- High blood pressure
- Diabetic Coma
- Dialysis treatment
- Inability to convert sugars and starches into energy
- Decreased insulin production

Description

The first thing we did was plan on how we would make our star logo models. We chose to make two separate models, one for Santo Domingo and the other for San Juan. We wanted to include the variables of diabetes such as poor diet, little or no exercise, and genetics.

The second thing we did to get started with our star logo model was to do some research. We went on over to the Indian Health Hospital next door to our school and spoke to a dietitian/doctor. She gave us some pamphlets on healthy diets and on diabetes. After speaking with her we went back to the school and went online to gather some more information.

We also went to the Santo Domingo Health Clinic to get some more information. We had a minor set back with getting information from the clinic in San Juan because there isn't one. They have a fitness center (for the adults) but not a health clinic. So we decided to do a survey on diabetes with the students at our school. We gathered all San Juan and Santo Domingo students and asked them to do our survey. The information we got from the surveys was great.

After our research was done we started to put together our model on star logo. We had little experience working with the program so we decided to ask our teacher for help. Mrs. Martinez helped us get started with our code but wasn't able to help us any further because she had classes to teach. We had made one model for Santo Domingo Pueblo and we still needed the other for San Juan. So we contacted Irene to come and help us out. She got us a little further and we continued to work on the second model.

Appendixes
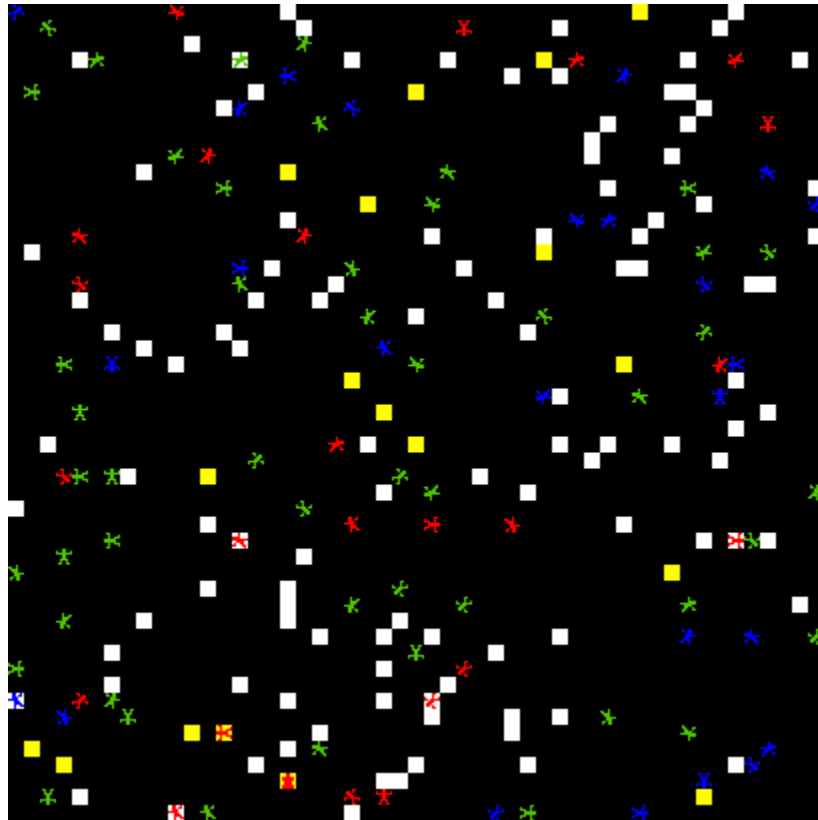
This is the first Model of Santo Domingo.

Results

The results we got from our star logo model were both good and bad. The first model showed that the people of Santo Domingo have bad eating habits and diabetes in their genetics. It also showed that about half of the total population exercise. The number of people that have diabetes will slowly increase not as fast as the other model.

Our research showed that the community members from Santo Domingo eat out a lot to fast food places. The Santo Domingo students at our school said that they get a lot of exercise and yet they eat a lot of fast foods. The majority of the students said that one or more people in their family have diabetes.

The second model shows the same findings of poor diet, and little or no exercise. In the San Juan model we found that the rate will increase faster due to lack of fitness centers to enforce that exercise is very important.

In both models we used the same variables of poor diet (fast food places), exercise (gyms), diabetes in genetics, and over all health. We chose to put all variables in with the turtles so that it will increase or decrease the number of turtles. Since our surveys showed that the San Juan Pueblo Community has no open gyms or fitness centers, we chose to take out the variable of exercise (gyms) in the model. After removing the exercise variable in their model the number of turtles that have diabetes increased. This showed that exercise helps prevent diabetes and makes your body healthier. The survey also showed that the number of times that the Santo Domingo people go out to eat is higher. So we chose to increase the amount of

patches that represent fast food places on their model. This showed us that fast food increases the number of diabetic people because it is all high fats that they eat.

Over all we proved that exercise does help and so does eating right. The results we got from the models showed that if our people keep getting diagnosed at a significant rate then we will be seeing more medical problems and deaths in our pueblos.

Conclusion

The Conclusion we came to was that there is a lot that needs to be done in our pueblos so that our people can be healthy and live good long lives. We concluded that high fats, sugars, poor diets, no exercise, genetics, and carelessness are the causes of diabetes. We also proved that exercise helps and that both pueblos need recreation buildings for adults and children. Both pueblos also need to get medical centers closer to the villages for emergency medical needs. We also found out that our people eat a lot of things that aren't very good for them. Another thing that we found through our research and model is that we as Native American people tend to have diabetes run through the genetics and we have to be real careful about our health. The reason why is because Native Americans as a whole are 3 times more likely to get diabetes.

References

Diabetes survey

Santo Domingo Health Center

PHS/ Doctor Kasalva

http://www.diabetes.com/

www.HealthCentral.com

http://www.diabetes.org/about-diabetes.jsp

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