

**From Underfeeding to Over-eating:  
The origins of the High Incidence of Obesity, Diabetes, Hypertension and Cardio-vascular  
Disease in Barbados.**

I would like to start by showing my great appreciation and thanks to the organizing team of the 2015 Lecture Series “...Of Distempers, Diagnoses, and Development: the Provision of Medical Services in Barbados” by inviting me to be one of the distinguished speakers for this years series. I note from the program that many well-known and distinguished names have presented before me and I hope that my presentation today will continue to live up to the high standards already established by the lecture series.

This is a lecture series organized by the Barbados Museum and Historical Society and maybe many would associate this society with events that happened far before our lifetimes. Yes the society has been instrumental in chronicling and preserving the past history of Barbados but today we are going to be speaking about a more recent history. A history that most of us have lived and are currently living. Today we will use history as a mirror to look into the future and predict what lies ahead of us as we crawl into the second decade of the 21<sup>st</sup> Century.

According to the 1981 national health and nutrition survey for Barbados 29% of the children under 5 years old were at that time malnourished (0.5% severely, 3.6% moderately and 24.9% mildly). The survey observes that this level represented a decrease in the level of malnourished pre-school children in the population when compared to earlier estimates. In fact the 1975 data shows that in the same age group 39% of children were classified as malnourished (0.3% severely, 3.2% moderately and 35.5% mildly).

In the same 1981 national health and nutrition survey, 20% of female adolescents (10-19 years) were classified as being overweight. So the picture less than 35 years ago was of a population where one third of the children were malnourished and one fifth of the female adolescents were overweight.

As we moved into the 21<sup>st</sup> Century, by 2010 the prevalence of overweight and obesity rose to 32% for boys and 37% for girls. Ten years later, in 2011, WHO’s Global School-based Student Health Survey (GSHS) shows that under 5% of 13-15 year olds were underweight while over 46% were either overweight or obese, with boys and girls having similar statistics (46% boys, 46.4% girls).

So in a period of 35 years, or one generation, Barbados has moved from an island where a third of the children are malnourished to almost four in every ten adolescents being overweight or obese.

The same trend has also been seen in adults with the mean body mass index of adults females moving from just over 26 in 1980 to just under 30 in 2008. With men following similar patterns starting at a healthy mean BMI of 24 in 1980 but moving to a mean BMI of 27 by 2008. This has translated in over 74% of females and over 57% of males being either overweight or obese according to the health of the nation study of 2011.

What is the cause of this?

What are the drivers that have made this happen? and

What are the consequences of this transition?

Some of the driving forces behind the changes in nutrition status from undernourishment to obesity can be attributed to globalization. To varying extents urbanization, advanced communications, and rapid technological advancement have altered personal and national lifestyles, which have changed the types of foods available, purchased, and consumed including ready prepared, high fat, and high sugar foods.

Looking at the data on energy intake in Barbados from 1965 to 2000 there has been an increase of approximately 400kcalories per day per person. The equivalent of a leg and thigh (300g) of chicken roasted with the skin on.

This in itself is worrying as the daily energy intake in 1965 was already around 2600 kcalories, which is above the recommended average intake for healthy living, which WHO estimates as being between 2000 to 2400kcalories/day). So in 2000 the data shows that the average adult in Barbados was consuming over 3000kcalories per day or between 600 to 1000 kcalories per day more than recommended intake. The equivalent of two to three leg and thigh (300g) of chicken roasted with the skin on.

Now that in itself is worrying, but we know that energy intake is made up of different components of the food. There are those components that are important for muscle building and repair, those that provide us the energy to be active and others that help us lead a healthy life. But what has happened over the thirty five years I have mentioned is that the contribution of fat in the diet has moved from 22% or 570kcalories in 1965 to 29% (870kcalories) in 2000. This means that 300 out of the 400 extra calories we have added between 1965 and 2000 have come from FAT.

And the story gets worse because more recent studies in 2005 show that although the total energy intake was almost identical to that from the Barbados Food Consumption and Anthropometric Survey 2000, but the percent energy derived from fat was from 2.1% to 5.2% higher.

How has this happened ?

Have we really changed our cooking and eating habits that much and that quickly ?

Well, the Barbados Food Consumption Survey of 2000 shows another disturbing piece of data.

45% of men and 31% of women said that they regularly purchased ready-to-eat meals and this figure was significantly higher in the younger age groups. In fact nearly 47% percent of younger men (< 30 years) and 26% of younger women consumed ready-to-eat meals three or more times per week.

Now there are ready-to-eat meals and ready-to-eat meals but not surprisingly nearly 54% of men and 44% of women less than 30 years of age obtained these ready-to-eat meals at a fast-food outlet at least once a week.

The 2005 dietary pattern study also showed that sugar intake exceeded the Caribbean recommendation almost four-fold and sweetened drinks and juices provided over 40% of total sugar intake. This was a study done with adults but the teens, as you can expect, were no better. The 2011 GSHS showed that over 73% of students usually drink carbonated soft drinks one or more times per DAY.

So we know that we are eating too much but obesity is the result of EXCESS energy in the body. So if we use the energy we take in there shouldn't be a problem.

But here lies the second cause of the transition.

In 1995, Barbados had a total of 55,668 vehicles on the island, of which just under 43 thousand were private cars. By 2005, only ten years later, the number of vehicles had doubled to 116,675 of which just under 95 thousand were private. So between 1995 and 2005 the number of private cars has doubled.

According to the World Bank in 2007 there were 469 motor vehicles per 1000 people living in Barbados. This was the highest for all the Caribbean with Trinidad coming second at 353 per thousand - so 100 cars per 1000 population less than Barbados. When we look at some of the

highly developed countries we see Denmark at 480 cars per 1000 (just 11 more than Barbados) and the UK at 519 (50 more).

So when did this all change?

I remember my first visit to Barbados as a young intern to QEH in the mid-eighties and coming from Malta, a country that in 2011 registered 709 cars per 1000 (8<sup>th</sup> in the world) and also has the highest rate of childhood obesity in the European Union, I was struck by the low number of motor vehicles on the road and how easy it was to walk from QEH to Bridgetown and to other parts of St Michael and Christchurch.

When I came back to the Caribbean in 2001 I was shocked at the change and how the simple walk from QEH was now a life threatening venture due to the increased volume of traffic. And as you know things have not gotten any better.

Data from the central Bank of Barbados shows that while in 1994 just over 1500 vehicles were imported this increased to over 8,000 in 1998 and has been maintained at an average of 5000 vehicles per annum since then.

The effect of all this is that in 2007 data from WHO shows that over 51% of adults in Barbados did not meet the WHO recommendations for physical activity and this goes up to 60% in females. The data is no better for our adolescents with the Global School-based Student Health Survey of 2011 showing that only a third of students were meeting the recommendations of physical activity for health (34.5% boys and 23.3% girls).

I ask you “How many of you were driven to school in your parents car ?” but in one generation “How many of you drive your children or grandchildren to school now ?”

So we are eating more and we are exercising less – this is what history, or at least the data from studies, has shown us.

So what are the consequences that we face ? and here, as I promised you at the start, I will also try and use history as a mirror for the future.

The direct consequence of an increased energy balance and obesity prevalence has been a dramatic increase in non-communicable diseases. We are speaking here of cancer, diabetes, cardiovascular diseases and chronic respiratory diseases.

Today 84% of total deaths in Barbados are attributed to these diseases. The latest WHO data shows that there is a 14% probability of dying between the ages of 30 and 70 years from the 4 main non-communicable diseases (cancer, diabetes, cardiovascular diseases and chronic respiratory diseases). This means that 14 out of every 100 persons living in Barbados aged 30 to 70 will die from NCDs. 14 out of every 100 of the productive adult population of this country will not see their 70<sup>th</sup> Birthday. Now I know you may say, have you not seen the papers lately, almost every day we celebrate a new centenarian ? Yes I do see the papers, but again is this going to be another generational change ? Will our children see so many centenarians when they are our age ?

But centenarians, and here I salute all those who have celebrated this milestone and who have contributed so much to the development of Barbados, are not the people that will move development forward. They have done their job and now enjoy the fruits of their labour.

The continued development of this country depends on those who are of productive age and it is this group that are dying prematurely from NCDs. It is this group that have the highest rate of disability from NCDs. It is this group that are needed to continue the development of this country.

The Barbados Health of The Nation shows that 21% of women and 16% of men have diabetes; 44% of women and 37% of men have hypertension and 46% of women and 60% of men have a total to HDL cholesterol ratio of 5 or greater.

In 2012 WHO stated that amongst women Barbados has the highest cancer burden attributable to overweight and obesity. This is 4 times the average across the globe. The WHO study also shows that one quarter of all cancers attributable to overweight and obesity worldwide (118 000 cases) could have been prevented if populations had simply maintained their average BMI of 30 years ago.

These are alarming statistics. This is the consequence of our obesity problem. This is a consequence of our over eating, unbalanced diet and physical inactivity.

If I use this history as a mirror to see the future, the future does not look good. The ravaging effects of NCDs are not only killing the motor of productivity but are disabling society from moving forward. NCDs do not only kill, but they can kill slowly and in so doing disable that person from being productive in society. They not only affect the person, but affect the whole family and society at large.

Think of the breadwinner of a family who now has to be hooked up to a dialysis machine two to three times a day. I will not even start to tell you how much that costs the Ministry of Health in ensuring that the treatment is given to the best of their ability. I ask you to think how that family dynamic changes when the breadwinner is no longer able to work full time, when that breadwinner is so tired and sick that they cannot get themselves to the dialysis unit and need another family member to assist them. I ask you to think how the dynamic of that family changes when they have to make structural changes to the house to accommodate the person who has suffered a stroke. I ask you to think of how the dynamic of the family changes when that young adult starts to become blind as a consequence of NCDs. I ask you to think of how the dynamic of the family changes when that family member loses a limb as a consequence of NCDs.

And then I ask you to think of how the dynamic of the whole of society, close and afar, changes as the disabilities of NCDs hit us. As more and more persons in their productive years get struck with a disability due to NCDs the whole of society will have to change.

And as I said this is the age group which is the motor of our economy, this is the age group that have the creative minds, this is the age group that has the intellectual capacity to keep Barbados in the forefront of development.

If we lose this, we lose our development edge

If we lose this we lose our ability to remain competitive in the World

If we lose this we lose the ability to be where decisions are taken and no longer lead but have to be led.

But all is not bleak and when I look at the mirror of history I see that the people of Barbados have always been resilient and resourceful.

Much has already been done to mobilize the political agenda, and here I don't just mean the politicians who sit in Parliament. We have a very active and resourceful civil society who in tandem with the political class has moved the agenda of NCD prevention and management. Barbados is one of the few countries in the Caribbean, and in fact the World that has a Strategic Plan for the Prevention and Control of NCDs. It is also one of the few countries that has a National Commission for NCDs which has representatives from Government, Civil Society, Faith based Organizations, the Trade Unions and the Private Sector.

We now need to move from policy to action.

When it comes to management of NCDs the Barbados Health of the Nation showed that although 1 in 3 women are on treatment for hypertension, another 1 in 10 are hypertensive but are not on treatment and 1 in 5 men are in the same situation. We therefore need to get better in screening, identifying persons at risk and treating NCDs.

But by just mopping the floor we will not stop the water causing a flood, we need to turn off the tap.

To do this we need to work harder on the prevention of NCDs. We need to reduce the total calorie intake of the population and increase the activity level of all the people living in Barbados. We need to protect our children from obesity.

The global increase in obesity has been described by the Lancet in 2011 as “a normal response by normal people to an abnormal environment”. People cannot change unless there is an enabling environment which surrounds them and enables them to make the healthy choices. The healthy choices need to be the easy choices and although it is ultimately the individual behaviour that needs to change, the environment we live in is influenced by Government, schools, food producers, retailers and all those who through their actions make the healthy choice either more difficult or more easy to achieve.

Looking at the mirror of history I see three things that affect our dietary intake:

1. High intake of sweetened juices and sugary carbonated drinks. These could easily be replaced by fresh unsweetened juices and other sugar free drinks. But to see this change we need to have an enabling environment. I would like to see all school children being able to drink water at school, to be able to go into a restaurant and have the economic choice available i.e. the cost of water or unsweetened juices and drinks being cheaper than the carbonated sugary drinks. I would like to see our vendors be they at schools, around schools, at workplaces, by the sea or during Crop-Over to have available healthy sugar free drinks, which are also sold at a cheaper price than the sugary carbonated ones. The fact that the healthy option is available is only the first step to an enabling environment. Ensuring that the healthy option is the more affordable option is the only way we can ensure that the healthy choice is the easiest choice.
2. Replacing the most common sources of fat with lower fat alternatives. We can easily make Barbados a Trans-fat Free island. We import all our trans-fats which are not naturally available. They are manufactured fats that are only used in the processing of foods. We don't need them and they are one of the major causes of NCDs in the World. Making Barbados the first Trans-fat Free island in the Caribbean will not only be a huge achievement in the prevention of the population against NCDs but will also give a signal

to the Caribbean and the World that the whole of society in Barbados, the Government, Civil Society and the Private Sector are all in this fight together.

3. Reducing the salt intake of our population. Salt is a major contributor to hypertension and all processed foods tend to have a high salt content. Let us start with ourselves, let us all here tonight agree that we will not add salt on the table. Let us take a look at the mirror of history and see those amputations, see those strokes, see those young men and women who have died as a consequence of high blood pressure. And as we look at the mirror of history let us look at the future and see a Barbados consuming less salt in its diet. Let us work together, Government, Private Sector and Civil Society to make Barbados a country where the food we eat tastes good because it has natural flavourings, the beautiful flavours of the Caribbean.

Finally we all need to exercise more. My appeal to all parents – please let your children be active, PE at school is not a waste of time. As we enter the exam time in our academic year I ask all parents to allow their children to exercise an hour a day. This is not lost time but it is time to not only refresh the brain and the body but also important for a healthy adulthood.

In conclusion I hope that I have been able to fulfil my task and contribute meaningfully to this years lecture series of Distempers, Diagnoses, and Development: the Provision of Medical Services in Barbados.

I leave you with a final thought as we traverse from celebrating Hero's Day to Labour Day

“We need to act now as obesity and its consequences will reverse all the hard work done by previous generations to bring Barbados to the level of development it enjoys today”

Thank You.