



Probis Club of Central Edmonton Newsletter

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Probis Events:

June 15 – Dr. James Shapiro

Dr. James Shapiro described the “Journey from The Edmonton Protocol to Stem Cell-Based Curative Therapies for Diabetes”. James grew up in Leeds England as the son of family doctor. During his years as student at the faculty of medicine at University Newcastle he gained a lifelong fascination in islet cell transplantation. He has been at the U of A since 1998. He holds a tier 1 Canada research chair in transplantation surgery and regenerative medicine. He also works as liver cancer and transplant surgeon. He was the lead investigator in the Edmonton Protocol and was the first in Canada to start human trials in stem cell transplant surgery. Dr Shapiro is the recipient of many prestigious awards and has written a great many articles.

Dr Shapiro started by setting out the many progresses made in medical field over the last 30 years. It was staggering list of advances which resulted in the extended Canadians life expectancy. Specific to Diabetes he noted that in the 1920 diabetes was viewed as a death sentence with treatments such as a starvation diet. The diet added some time to suffers life, but at a significant cost.

Then Dr. Banting had an idea in 1920 that ligating the pancreatic duct in dogs could lead to improved production of insulin. Dr Shapiro shared several historic documents from Banting which discussed this idea. In 1921, the first patient received insulin orally, this did not work. A short time later “McLeod’s serum” was injected into patient, while blood sugar declined no clinical benefits were observed. They then used alcohol to purify the insulin. In 1922, this led experiments that showed incredibly positive results. Insulin was moved into production and widespread use. James noted that insulin is not a cure but treatment. Keep in mind that someone dies of diabetes every 6 seconds. In 2020, 403 million suffer from its worldwide. It is the most expensive of all the diseases.

While there has been lots of advances in treatment, but even with these there is lots of fluctuation in the blood sugar levels of suffers. He explains that this is because the current treatment approach of injection is imprecise. He used this statement to lead into islet cell replacement therapy. It will provide the precision needed.

Islet cells live in the pancreas they make insulin and pulsate it every 10 to 15 minutes. With this blood sugar can be kept at proper levels. He needs a treatment which mimics this activity. The idea of using transplanted islet cells goes back to 1893 in England when a sheep’s pancreas was grafted into a patient. It had no chance of working, but it was first step. In 1924 pancreas from road traffic victims were use in patients. Paul Lacy in 1973 demonstrated by transplanting islets cell into rats that such an approach could be means of

treating diabetes. In 1989 surgeons in Edmonton carried out the first islets transplant. The paper on this matter motivated Dr Shapiro to come to Edmonton. Several developments in the process of isolating the islet cells were realized and are part of the Edmonton protocol. He acknowledged that Paul Greenwood was instrumental in securing the approval for islet transplantation into the liver as a funded care. In Dr Shapiro's opinion, this was significant step. He noted the successes achieved but issues remain, and thus more research is needed. Islet transplant work now but 2 main issues remain: first islet supply is limited, and next is the need to suppress immune response. Experiments are being conducted in immune suppression area with "Treg Cells". They are also looking at islet supply by using stem cells. Researchers have shown that they can be produce human embryonic stem cells, then grow islet cells from these. Injection of these cells result in insulin production. They are now looking at editing the genes inside the cells to reduce risk of rejection. Also, looking at using a patient's own stem cells. Researchers are seeking approval for this work. In his experience this approach is absolutely possible. There is a plan to move to a new stage in the next 12 months, this means moving to a facility at the U of A to manufacture the cells and inject them into patients. Researchers have established a new group of 60 scientist and submitted a request for funding moving forward on a number areas in advanced cellular therapy for diabetes.

He ended the presentation by sharing the many areas under review and his very positive outlook for the future. He presented a world of truly remarkable advances. We thank him for his time and the presentation. As is normal, the presentation was followed by many questions that he answered with skill and patience.

June 28 - Susan Morrisey

Susan Morrisey, Executive Director of the Edmonton Social Planning Council spoke to us about the Council and Covid 19 in context of the more disadvantaged of our community. She started with the now standard acknowledgment of the being on Treaty 6 land.

The Council is an independent, non-profit, non-partisan social research organization. It focusses on research in low income and poverty.

The Council was incorporated in 1940. This was initiated by several social agencies and individual with an interest in social issues. The Council does:

- Social research
- Public awareness
- Providing an independent voice
- Capacity building in other agencies

The Council has developed a "Social Well-Being Tracker" it is available to the public on their website. It tracks trends in social wellness indicators in Edmonton. There are around 75 indicators in the tracker. It provides us with an understanding of challenges people face.

Also, it provides information to decision makers, and it is a tool for social organizations and researchers.

With respect to Covid 19, it was declared a pandemic in March of 2020. Restrictions have lasted until June 2021. The pressure points on the vulnerable members of the community included; housing needs, increased domestic violence, and financial issues amongst several others. An important point to understand is that an individual may suffered from a number of these with some causal relationship amongst issues.

From the beginning of Covid, indigenous community has been at greater risk to Covid due in part to higher rates of underlying health issues. She also pointed out the studies show other communities, such as visible minorities and LGBT+ are impacted by several challenges exacerbate by Covid impact on the economy.

She shared statistics on the makeup of homelessness in Edmonton, these were 2406 homeless people at June 21; 60% were indigenous, 56% male and 48% aged 25-44.

Homeless people were at risk because it was difficult for them to isolate, limited access to health care, early in the pandemic social services agencies shut down limiting access to help, etc.

Food insecurity has also increased due to covid. In 2020 over 60,000 Edmontonian received a hamper from the foodbank. In the first 3 months of 2021 over 75,000 people have received a hamper. A positive was that early in the pandemic a considerable effort was placed on getting food to those unable to go out. She also spoke of impact on people with addictions.

She touched on several other indicators which show negative impacts on individual groups.

The picture painted by the changes in any of these indicates during the period of Covid 19 Pandemic was a series erosion in the social condition of many individuals in our community.

It was noted by Susan that while Covid had a negative impact the issue underlying the indicators have been around for a considerable time.

Susan set out a challenging situation for her agency and many others who focus on social issues, as well as for community members. It was quite an interesting presentation. We thank her for it.

Stay Health and Enjoy