

Opening Statement

Senator Susan M. Collins

**Chairman, Committee on Homeland Security and
Governmental Affairs**

**“The Potential of an Artificial Pancreas:
Improving Care for People with Diabetes”
September 27, 2006**

As the founder and co-chair of the Senate Diabetes Caucus, I have learned a great deal about diabetes and the difficulties and heartbreak that it causes for so many American families as they await a cure. This hearing will examine the potential that new technologies have for improving the care and quality of life for people living with diabetes.

Diabetes is a costly and devastating disease. Nearly 21 million Americans have diabetes, and one in three American children born today will develop the disease.

Diabetes is a life-long condition that affects people of every age, race, and nationality. It is the leading cause of kidney failure, blindness in adults, and amputations not related to injury.

Moreover, it is estimated that diabetes accounts for more than \$132 billion of our nation's annual health care costs and one out of every three Medicare dollars.

The burden of diabetes is particularly heavy for children and young adults with Type 1, or juvenile diabetes. They not only have the disease from an early age, but also must endure a lifetime of treatment and related complications. This is a disease that they will never outgrow.

In individuals with juvenile diabetes, the body's immune system attacks the pancreas and destroys the islet cells that produce insulin. The average child with Type 1 diabetes will have to take 50,000 insulin shots in a lifetime. Moreover, these children and

adults must closely monitor their blood sugar levels throughout their lives through frequent testing.

While the discovery of insulin was a landmark breakthrough in the treatment of diabetes, it is not a cure, and people with diabetes face the constant threat of developing life-threatening complications, as well as a drastic reduction in their quality of life.

Fortunately, however, there are new technologies on the horizon that hold great promise for treating diabetes.

The fact is, current diabetes technology is inadequate. Some studies have found that even patients who aggressively manage their disease – for example, those who measure their blood glucose levels an average of nine times a day – spend less than 30 percent of their day in the normal range. The rest of the time, their blood sugar levels are either too high or too low.

This morning's hearing will explore the potential for the development of a closed-loop artificial pancreas that could revolutionize diabetes care. The artificial pancreas would link two existing technologies, the insulin pump and the continuous glucose monitor. Used together, these two technologies have the potential to dramatically improve blood glucose control, which would improve the quality of diabetes care and help to prevent such serious and costly complications as blindness, heart attacks, kidney failure, and amputations.

In addition to testimony about the personal and economic toll that diabetes imposes, this hearing will also feature testimony about the limitations of current treatments and the promise of new technologies. We will hear why an artificial pancreas would make such a difference until a cure is found, and we will discuss the progress in its development. Finally, we will look at the ongoing collaborative efforts on the part of the federal government, the

JDRF, and private industry to develop these innovative new technologies and make them widely available.

I also look forward to hearing from our witnesses about what Congress can do to help this effort move forward.