The need for less waste and more recycling in diabetes technology

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A presentation at this year's annual meeting of the European Association for the Study of Diabetes in Stockholm (19-23 September) will highlight the need to reduce the amount of waste created by diabetes care products

and discuss different strategies to increase sustainability and recycling for diabetes technologies. The talk will be given by Professor Lutz Heinemann, Science Consulting in Diabetes GmbH, Kaarst, Germany.

A collaboration including medical specialists, environmental health experts, and manufacturers met in summer 2021 to reduce the environmental footprint left by plastics used in diabetes care. Prof Heinemann explains, "After all, disposable diabetes devices—such as needles, syringes and pens, lancets, blood glucose monitoring strips and monitors, systems for continuous glucose monitoring, insulin bottles, infusion tubing, disposable pumps, and batteries—create enormous amounts of plastic and other waste. Yet the diabetes care products themselves may represent only 10% of the total weight and volume of the waste, the rest is the packaging."

The Diabetes Technology Society (DTS) in the U.S. is in the vanguard of attempts to reduce diabetes-related waste. The DTS is committed to conserving natural resources and waste management processes to promote environmental sustainability, which they base around the five Rs: reducing, reusing, recycling, redesigning, and re-educating.

In 2021 the DTS convened the Green Diabetes Summit. This was the first time that players from all relevant groups talked with each other about sustainability and reducing plastic waste.

"During the meeting, it became clear that all of us have to leave our comfort zone and see what each of us can contribute," explains Prof. Heinemann, and continues, "Only by joining forces and building coalitions we will have a chance to tackle plastic waste from diabetes care. We have to enhance the sustainability of diabetes devices throughout the product's lifetime, including the use of raw materials for manufacture, packaging, and transport."

Recycling in diabetes is nothing new. A recycling initiative supported the first ready-made insulin pen, which Novo Nordisk launched in the 1990s. The pens were recycled into park benches. Under a Novo Nordisk pilot scheme in Denmark, patients can now recycle used pens through pharmacies. Recycling products sounds like a good idea at the first glance; however, separating current products into their different components is often difficult. Currently, there is only a small market for recycled plastic.

The Green Diabetes Summit explored the importance of balancing performance and environmental impact when designing and developing new products.

"There is a need for a change and shift in the mindset when designing new products to tackle this issue," explains Prof Heinemann. "Designers have to think about recycling right from the beginning. Otherwise, it is difficult to separate batteries, electronic parts, and plastic. There is also a need for a shift in the attitude of purchasers and buyers of diabetes products for sustainable products to be viewed favorably and to have a competitive advantage in the marketplace. Inevitably, recycling and other environmental initiatives carry costs."

Whether patients or health services, even in high-income countries, are willing to pay a premium price for more environmentally friendly products is a moot point. The triple bottom line (profit, people, planet), which is used for assessing the sustainability of a business or organization, is an accounting framework that incorporates financial performance as well as social and environmental benefits. A society-wide change in consciousness to value all three parts of the triple bottom line will be needed for the industry to consider environmental benefits in product design.

"Patients with diabetes will pay more attention to plastic waste," states

Prof Heinemann. "If they start to base their selection of a given insulin pen or CGM system also on the environmental impact, this will have an impact on companies." Regulatory or legal frameworks that force to reduce the environmental footprint of such medical products will also help.

"A recognition that a concerted effort is needed and a collaborative approach concerning the handling of waste associated with diabetes therapy are emerging," concludes Prof. Heinemann, "and if all stakeholders work together to create coalitions devoted to diabetes device sustainability and waste management, then much can be accomplished."

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