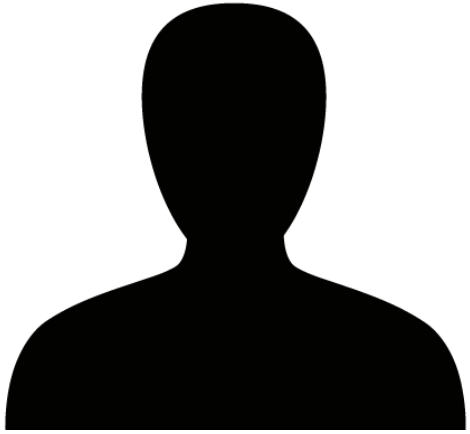
DISCREET DISPOSAL



END USER

Currently around 2.9 million people in the UK have a diagnosis of Diabetes. Worldwide there are estimated to be over 346 million. The UK prevalence is increasing from 3.54 % of the population in 2006, to 4.45% in 2011, and it is estimated there are hundreds of thousands of people undiagnosed.

Type 1, or Insulin-Dependent Diabetes Mellitus (IDDM), is a condition whereby the body is unable to produce the hormone Insulin. This leads to an increase in blood sugar levels. If untreated, this can cause serious damage to all the organ systems in the body. Type 1 diabetes can be managed by monitoring and maintaining an appropriate blood sugar level by injecting the correct amount of Insulin.

From a design point of view, designing for all diabetics is a bit like designing for people with red hair or people who are good at jumping. The user group are as varied as any other group and diabetics are made up of people from all walks of life.

My brother Nick is Type 1 diabetic, and the inspiration behind this project, so it makes sense to design something for him. Hopefully whatever I design for him, will be transferable to others.

HEALTH PROFESSIONALS

A poorly controlled blood sugar level increases the risk of developing serious complications. Diabetes is now the biggest single cause of amputation, stroke, blindness and end-stage kidney failure in the UK and accounts for 10% of the entire NHS budget.

Identifying and making contact with the various health professionals who specialise in the managing and treatment of people of diabetes would be a good place to start. Tapping into existing knowledge and experience will only be of benefit to the project. Identifying other diabetes related events to try to gain insights from would also be useful.

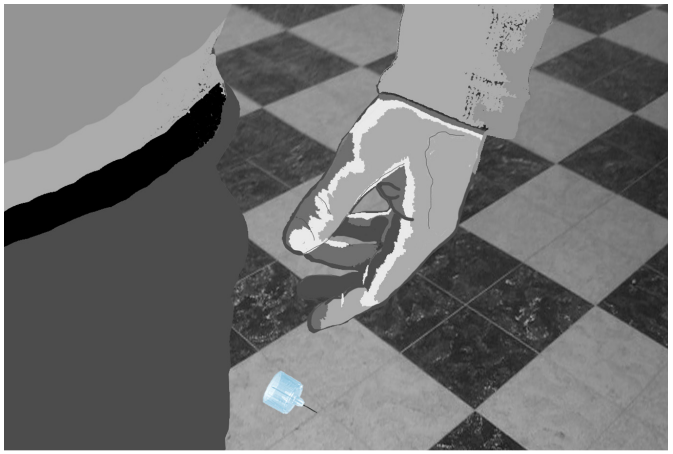
MANUFACTURERS

Manufacturers of equipment used to treat diabetes are also stakeholders in this project. Any new innovation that is produced could be designed to work in conjunction with existing equipment or build upon existing technology. However it would only make sense to consult them if/when a viable product has been produced.

There are several sharps companies producing sharps for the NHS and a number of different Insulin pens. The sharps are very similar in design with the main difference being the outer plastic shell, which is different for each manufacturer.

STAKEHOLDERS

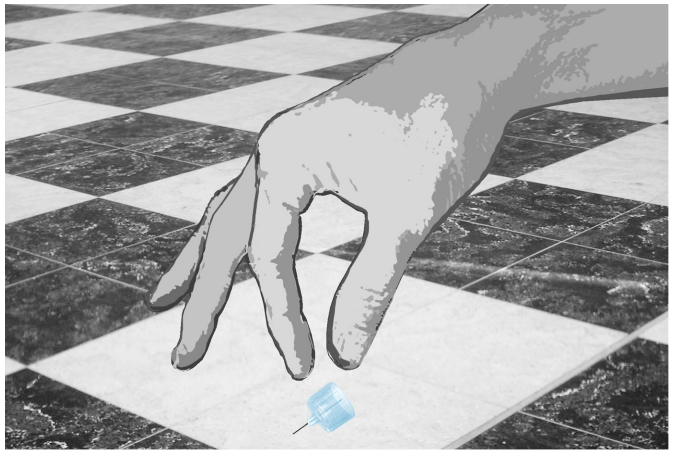
DISCREET DISPOSAL



LOST

"When I was taking my insulin in the staffroom toilet at work, a used sharp fell out of my pocket and onto the ground".

NICK



FOUND

"Someone else noticed the sharp on the floor and called the manager. She suspected that one of the staff had been taking drugs and called a staff meeting to identify the culprit".

NICK

ACCUSED

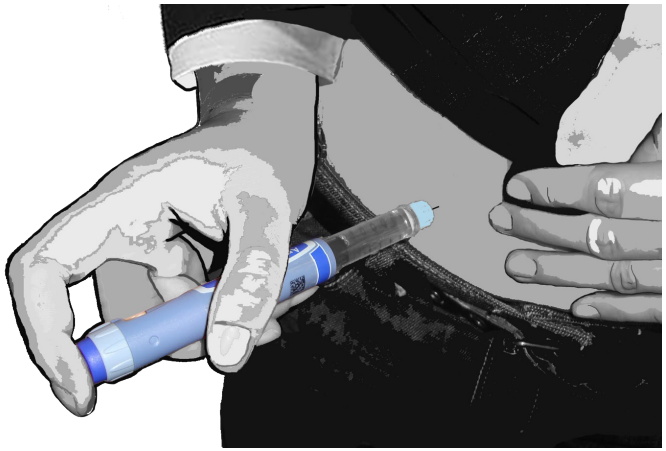
"I explained that I'm diabetic and that the sharp must have fallen out of my pocket. My manager looked awkward for jumping to conclusions and I felt embarrassed for the resulting scene".

NICK

My brother carries his sharps around in his pockets. This can result in used or unused sharps falling out of pockets. A portable container that holds sharps would allow the user to safely carry these around. A container that does not conform to the stereotypical design of a yellow sharps container bin would also be an advantage. There is a stigma attached to these types of medical objects that could have a negative impact on any newly designed product.

INSIGHT 1

DISCREET DISPOSAL



INJECT

"I was running late for an appointment in town and I needed to take my insulin while walking down the street".

NICK

THROWAWAY

"Instead of putting the sharp in my pocket, I just threw it in the bin. I know I'm not supposed to, but what's the harm"?

NICK

LANDFILL

"Sharps that are disposed of through the public waste system ends up in a landfill. Medical waste needs to be incinerated as it can spread infection or disease".

DIABETES NURSE

Sharps are not always being disposed of properly. Each year tonnes of sharps are ending up in landfill all across the UK. This is through disposal in public or household bins instead of correct sharps bins. It is important that sharps are disposed of correctly in allocated bins and incinerated for a number of reasons. Needles can cause injury to you or other people because they're sharp. Used needles carry body fluids, such as blood. Body fluids can carry infections that may be passed on to other people. No medical waste should end up in a landfill as this could have a negative effect on the environment.

DISCREET DISPOSAL

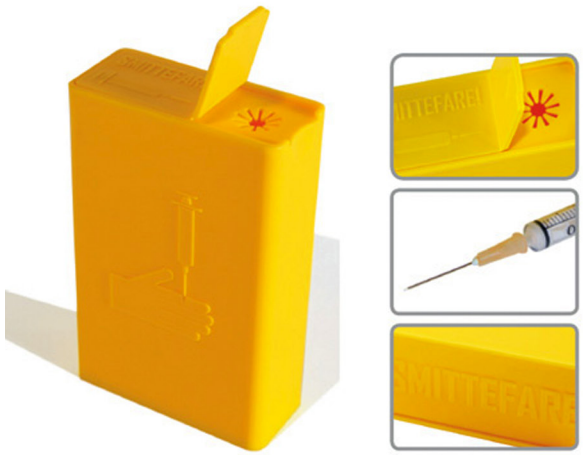
"Sharps containers always look so clinical and medical".

Can a portable sharps container become as personal as an old lighter or as refined as a cigar holder? Can it become as minimalist and trendy as an iPod or timeless as a Braun electric shaver?

Standard sharps containers are designed to be easily disposed. Containers are medical and clinical in design. They are cheap, plastic, mass-produced and stand out as clear medical equipment. But do they have to be? Could a personal sharps container be more personalised and desirable? Through good design, can a relationship be created between the object and the owner resulting in a desire to use it? Can good design actually promote good disposal?

Many medical devices can be viewed negatively in some social circumstances and taking insulin is a perfect example. The clinical, medical looking objects used to take insulin stand out, often to the detriment of the owner. But can good design create a positive discussion around taking insulin. Can a sharps container become a desirable object?

The stigma of having to use a medical device in public will inevitably lead to some adverse, or perceived adverse reactions. This could result in poor use of the medical device or possible non-use or non-compliance. The bright yellows and oranges of a sharps bin create a warning, suggest danger and make them easily identifiable and noticeable in a hospital or home environment. However these types of colours would not be suitable for a portable sharps container as to have the user could them be immediately associated with these types of warnings. A portable sharps container should be much more subtle, but at the same time safe. The weights and combination of materials should be balanced and its form should be tangible and comfortable in the hand.



MINIMALIST / REFINED

VISUAL LANGUAGE 1

DISCREET DISPOSAL

"I just throw my used sharps in the bin. Often I collect them in an old juice bottle".

Can existing products be adapted in some way to be used as sharps containers? Some people already do this, but unfortunately these home-made solutions often ends up in landfills and can often not be suitable or safe. Can people be encouraged to use certain suitable packaging or products to store sharps safely?

The reused and recycled design style should compliment the original product and require minimal modification. It should not hide the original purpose but rather celebrate its new found and unintended purpose. The new objects purpose should feel like a surprise for the user.

This route may involve a collection or disposal service by the NHS stakeholder. The viability of reusing existing packaging will need to be looked at to establish which is suitable. Guidelines for sharps containers would need to be checked also.

People can often create interesting solutions to problems by using the materials and objects they find around them. Objects intended for one purpose can often be used for something completely unrelated. This type of thinking could be the basis for this project. Finding a safe way to do what people are already doing and to promote that is a really interesting idea. It could be a way of engaging with people while sharing stories and ways of disposing with sharps.

RECYCLE / REUSE

VISUAL LANGUAGE 2

DISCREET DISPOSAL

I consulted with my user at each stage of this project. Although I used some co-design techniques, I have attempted to avoid the pitfalls of allowing my user to directly design the product. I listened to his feedback on each prototype and watched closely how he used each one in an attempt to understand which ones worked and which ones didn't.

One of the main early insights I discovered was that only 2 sharps were needed for daily use, so I used this as a starting point. There was an emphasis on play at this stage of sketch prototyping as I began to look at form, materials and material combinations, using both physical prototypes and 3D CAD models. I produced high quality visual renders and 3D prints to communicate my ideas.

Once I had a design I was happy with I began to create a final concept.

PROTOTYPING

DISCREET DISPOSAL

The ‘Hold’ sharps container challenges the idea of what a portable diabetic sharps container should look and feel like while promoting good sharps disposal. It is made from a solid piece of aluminium, milled out and given a brushed finish. Each side has a piece of laser cut Pao Rosa African hardwood framed perfectly on both sides.

Inside the container is a spring ejection mechanism to hold and push the used sharp out. Sharps can only be ejected when docking the container with the parent sharps bin at home. The container can then be refilled for the next day.

By creating a desirable product that is enjoyable to use, the owner is encouraged to dispose of their sharps safely. The design of the container gives the user a much more interesting object to carry around instead of having loose sharps in their pockets. It is hoped that through its minimalist, unusual design, positive conversations around diabetes can occur between the user and any onlookers.

hold

The logo of the 2 sharps was designed to be abstract, but at the same time easily recognisable by someone with diabetes. I decided that the logo would not appear on the product itself, as this would not be in keeping with the minimalist design.

CONCEPT / SOLUTION