



TAKING THE ADVANCED APPROACH

Pascale Farjas, global category manager for drug delivery company Nemera examines the design features that help improve adherence for patients using nasal spray devices.

Nemera develops and manufactures devices that truly improve patients' daily use. In particular, we provide millions of nasal sprays all over the world. We work every day to develop new features to improve patients' lives.

This is why we periodically organise user studies, to test our devices and get feedback and insights from users' experience.

Recently, we conducted a nasal user study at Nemera's La Verpillière site which aimed at receiving feedback to help better understand patients' nasal care habits.

The study, which featured 20 users aged between 20 and 60, was important as we wanted to better understand what users are expecting from their nasal spray.

Unsurprisingly, over half of the users (57%) said that ease of use is the most important point, followed by size and ease of transport in relation to nasal spray devices.

The study also highlighted another interesting point: people generally don't read the instructions for use. Only 25% of respondents always read them, but over 50% read them only occasionally.

This last point is very important to be considered, as it could explain how, in some cases, compliance rate is poor. Patient adherence is key for both therapy efficacy and avoidance of dangerous consequences using potent drugs.

HOW CAN A NASAL SPRAY IMPROVE PATIENTS' ADHERENCE?

Realising the challenges nasal spray users experience when using their devices, Nemera developed a platform designed to improve the level of patient adherence. Patient non-adherence with their drug could result in non-effective therapy or even dangerous consequences for potent drugs.

Advancia has been designed with a number of features to ensure an increased level of adherence and ease of use for the patient.

As we noticed from our last user-study, main expectations from nasal spray users are about size (compact format), ease of use and ease of transport. Most of the time,

they are quite happy with what's existing today but would like even easier-to-use/transport devices.

That's why engineering considerations during Advancia development were based on ergonomics and convenience on the design side. For instance, the snap-on version is easier to handle and avoids accidental actuation when being transported. Moreover, this overcap is more hygienic and protects the actuator from dust/ external environment, which is much appreciated and corresponds to the patient lifestyle nowadays.

As snap-on is the standard today for preservative-free nasal pumps, we differentiated Advancia through a patented specific snap-on system, with a full overcap. This allows one-



REFERENCE:

¹ Yokel RA1. Blood-brain barrier flux of aluminum, manganese, iron and other metals suspected to contribute to metal-induced neurodegeneration. *J Alzheimers Dis.* 2006 Nov;10(2-3):223-53.

step assembly during drug filling and is intended to facilitate device assembly onto different containers (plastic or glass).

More so, the platform's preservative-free version, Advancia PF avoids the need for preservatives in the drug, preventing bacterial contamination over the duration of treatment. This is achieved thanks to Nemera's PureFlow technology, which filters air entry by permeation through a silicone membrane.

Another beneficial feature for patients is Advancia's reliance on a new technology pump engine, which guarantees the dose in 100% delivered. For the user, Advancia's actuation profile makes it feel like they're having the full dose delivered, no matter how they use the device.

This consistency for example makes Advancia suitable for drugs with infrequent treatment needs, as the patient does not have to re-prime the system after several weeks of non-use.

Also, some drug formulations/ active ingredients can oxidise in contact with metallic parts and potentially become toxic, it was important that the device ensured there is no metal in contact with the drug formulation. Oxidation reactions can also alter and degrade metallic parts, potentially liberating toxic particles for the brain¹. Also, some deterging agents can be used during the manufacturing process of metallic parts, with the possibility to migrate into the drug formulation. That's why, in general but for some drugs in particular, it is recommended the fluid pathway is metallic-free.

One feature that users may not notice is the device's anti-clogging actuator. The mechanical closing tip ensures that no contamination can enter through the actuator orifice, providing protection from crystallisation and clogging issues, ensuring patient have a spray for each delivery.

When coming to problems encountered with some devices today, we realised that improving the design features of Advancia could help the patient in their daily use and overall satisfaction of the device. That's why Advancia is a mix of different benefits for the patient, but in particular user-independence.

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