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THE PHARMACEUTICAL INDUSTRY'S ROLE IN THE GLOBAL ENVIRONMENTAL SUSTAINABILITY MOVEMENT

In this article, Alex Catino, Product Commercialisation Associate at Noble, discusses current trends in the pharmaceutical industry in relation to environmental sustainability in healthcare.

Environmental sustainability is a broad, expansive concept that can apply to everything from agriculture and manufacturing to building design. But how is it defined?

The United States Environmental Protection Agency (EPA) defines sustainability based on an overarching principle: "Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. To pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations."¹

The creation of the EPA in 1970 is one of many inflection points that sparked the modern global environmental movement. In 1972, the United Nations (UN) held the

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first Conference on the Human Environment, which is widely considered one of the earliest global meetings to discuss the environment, conservation and sustainability.² In the early 1990s, "green brands" began to emerge, with companies using their environmental and sustainable business practices as selling points for consumers. By 2012, sustainability had cemented itself in the collective conscience of consumers and companies alike, with corporate social responsibility (CSR) and triple bottom line reports that measure financial, social and environmental performance emerging as standard responses to that consciousness.³

ENVIRONMENTAL SUSTAINABILITY IN HEALTHCARE

The WHO defines an environmentally sustainable health system as one that "improves, maintains or restores health, while minimising negative impacts on the environment and leveraging opportunities to restore and improve it, to the benefit of the health and well-being of current and future generations."⁴ Most importantly, human health is inextricably linked to the health of the environment, according to the Australian Medical Association.⁵

Within the healthcare sector, environmental sustainability involves using resources as efficiently as possible, without



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compromising the quality of patient care. Strategies that can foster environmental sustainability within this sector are promoting efficient management of resources and increasing sustainable procurement.

A major sustainability issue confronting the healthcare sector today is the number of hospitals that are ageing, meaning their technologies and systems are becoming outdated. Managing the renovation or replacement of these facilities in a sustainable way – using elements like green building design and construction, and incorporation of on-site renewable energy technology – can have a direct impact on the environment without impacting patient care.⁴

The healthcare sector is seeing increased pressure to make commitments and tangible progress that positively impact both the environment and society. The global shift towards achieving a sustainable future has made environmental stewardship an expected norm.

CURRENT TRENDS IN THE PHARMACEUTICAL INDUSTRY

An ageing world population and improved access to healthcare in emerging markets are driving increased demand within the pharmaceutical industry. Manufacturers today are responding to the demand by producing a wider variety of pharmaceutical products. However, the resulting changes to production can conflict with sustainability objectives.

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and sustainability in mind. In a 2018 *Pharma Manufacturing* article on achieving sustainability in an evolving pharma sector, Tom Egan, Vice-President, Industry Services, PMMI, said: “Pharmaceutical manufacturers must implement packaging solutions that minimise the environmental impact of expanding product lines, build sustainability practices into the development of new delivery systems, seek utility savings in new automation strategies and leverage serialisation.” For example, the article says, when it comes to accurate dosing, patients who achieve better results with oral, injectable or nasal sprays versus other formats provide a strong incentive for companies to offer those new delivery mechanisms.

These advancements in drug delivery add to the growing variety of products on the market. In addition, a shift towards smaller batch runs allows for more product diversity. However, more frequent changeovers on machinery are required to deliver this diversity of products, which in turn can have negative impacts on energy consumption at the manufacturing level.

CSR FOR ENVIRONMENTALLY SUSTAINABLE DRUG DELIVERY

Today, socially and environmentally responsible pharmaceutical companies are developing ways to produce their products more efficiently and sustainably. Companies have created self-imposed targets and initiatives to reduce the impact of their activities and products on the environment while keeping the patient and product efficacy top of mind (Figure 1).

APTAR IS A GLOBAL LEADER IN SUSTAINABILITY

One company making a difference in its commitment to creating a more sustainable future is AptarGroup, a global leader in drug delivery, consumer product dispensing and active packaging solutions. Earlier this year, Barron’s included Aptar on its list of the “100 Most Sustainable Companies in America” for the second consecutive year, and Newsweek named it one of “America’s Most Responsible Companies 2020”.

A member company of the World Business Council for Sustainable Development, Aptar also recently joined the UN Global Compact – the world’s largest citizenship initiative, which focuses on universal principles in the areas of human rights, labour, the environment and anti-corruption. “We are extremely proud of [our] commitment to reducing [Aptar’s] impact on the planet while creating quality products,” said Stephan Tanda, Aptar President and CEO.

Aptar Pharma, part of AptarGroup, is the company’s provider of innovative drug delivery solutions to pharmaceutical, consumer healthcare and biotech customers worldwide. Its patented Freepod multi-dose, preservative-free nasal spray device with GlaxoSmithKline’s Otrivin won the World Packaging Organisation’s prestigious WorldStar Award in 2019 for its sustainability impact. The award annually recognises advancement and excellence in packaging design and technology.



Figure 1: A reusable, resettable Noble training autoinjector, built to replicate the form and function of the true drug delivery device upon which it is based.



Figure 2: Various Noble patient training devices, all of which are resettable for ongoing use and practice.

NOBLE'S COMMITMENT TO ENVIRONMENTAL SUSTAINABILITY INITIATIVES

Noble, an Aptar Pharma company, promotes healthy patient outcomes for people who self-administer their drug therapies through the development of robust training and onboarding solutions for the world's top pharma brands and biotech companies. The company shares Aptar's commitment to creating a more sustainable future.

A prime example of how Noble contributes to a sustainable environment is through resettable training devices (Figure 2). These reusable training devices allow patients to repeatedly practise the use of autoinjectors, prefilled syringes and nasal delivery devices to educate themselves on proper usage technique and to help

them overcome their anxiety and fears – rather than using their single-use actual drug delivery devices filled with medication for practice, which requires disposal after a single use. In addition, pharma companies often achieve cost reductions and support their own sustainability initiatives by using Noble's resettable training devices.

There is an extraordinary, and often overlooked, downstream cost to the healthcare system when patients do not comply with their self-administered drug therapies – and noncompliance often begins because of a lack of upfront and ongoing training.

Not only does the patient suffer when they do not receive the proper dose of their medication, it also hurts the healthcare system by creating the need for additional goods and packaging, such as additional

shipping and more sharps waste. When a patient uses a resettable training device, they are more likely to receive a proper dose when using the actual drug delivery device. Simply put, when a patient gets it right the first time, our footprint shrinks.

Noble is also an environmental steward when it comes to its packaging designs, balancing sustainability with an understanding that the patient and product efficacy are key factors in the design process (Figure 3). This commitment to sustainable packaging extends to Noble's travel kits (Figure 4), which are designed to protect temperature-sensitive medications.

All materials used within Noble's packaging are compliant with the Restriction of Hazardous Substances (RoHS) directive that originated in the European Union to restrict the use of specific materials that are hazardous to the environment, including lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), polybrominated diphenyl ethers (PBDE), and four different phthalates (DEHP, BBP, BBP, DIBP).⁶ Additionally, nearly all of the company's packaging is also free of harmful chemicals such as paint and electroplated plastic components.

CONCLUSION

Due to pressing environmental needs, a focus on preserving the environment for future generations and a shift to more responsible consumption and production,



Figure 3: A Noble patient training kit made with recyclable materials.



Figure 4: A reusable Noble travel kit that is temperature controlled to keep medications at their optimal temperature while away from home.

companies have embraced more sustainable strategies. The link between sustainability, both environmental and social, has clear ties to human health, making advancement of these strategies a priority for healthcare and pharmaceutical industries alike (Figure 4).

ABOUT THE COMPANY

Noble is focused on fostering healthy patient outcomes for those who self-administer drug therapies through the development of robust training devices and onboarding solutions for the world's top pharma brands and biotech companies. Noble manufactures and commercialises training devices that mimic the exact feel, force and function of drug delivery devices such as autoinjectors, prefilled syringes and on-body, nasal and pulmonary devices in

order to increase patient adherence and confidence and decrease usage errors. Noble is an Aptar Pharma company.

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