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## For Immediate Release

### **Global Warming Impact of “Single-Use” Medical Device Cut in Half When Reprocessed Device Used Instead, According to Newly Published Research in *Sustainability***

#### **Life Cycle Analysis (LCA) of Electrophysiology Catheters Could Become a Roadmap for Hospitals to Quickly Reduce Environmental Footprint**

- The carbon footprint of plastic production for initial use is greater than the global warming impact of the entire process used for medical device reprocessing
- Use of reprocessed devices is environmentally superior to use of original products in 13 of 16 categories evaluated
- Reprocessing found to advance “circular economy,” a key strategy for reaching the UN Sustainability Goals
- LCA offers evidence showing that in order to reduce greenhouse gas emissions and honor the Paris Climate Agreement, EU Member States must opt-in to EU Medical Device Regulation (MDR)’s reprocessing/remanufacturing provisions

[Berlin / Washington, DC – 25 January 2021] Hospitals could cut emissions associated with some medical device use in half by opting instead for regulated, reprocessed “single-use” medical devices. The LCA evaluated the use of a reprocessed electrophysiology catheter compared with the use of original catheters for 16 different environmental impact categories and found that the use of reprocessed devices was superior in 13 categories.

The [study](#), conducted by Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT, a division the world’s leading applied research organization Fraunhofer-Gesellschaft and published in *Sustainability*, is the first comprehensive LCA exploring the environmental impact of a reprocessed “single-use” medical device compared to the “take-make-dispose” use of “single-use” original devices.

“By avoiding the use of virgin materials, reprocessing can reduce the environmental impacts of resource consumption and emissions, such as reducing abiotic resource use and the global warming impact (GWI),” said Anna Schulte, M.S.c., Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT and lead study author. “Hospitals that want to reduce harmful environmental impact should strongly consider using remanufactured 'single-use' medical devices like the EP catheters we studied.”

“This comprehensive LCA confirms what we’ve thought to be true - that reprocessed medical devices are significantly environmentally superior to the original device,” said Daniel J. Vukelich, President and CEO, Association of Medical Device Reprocessors. “These definitive environmental benefits, combined with the well documented financial and supply chain resiliency benefits of reprocessed devices make clear what EU Member States gain by ‘opting in’ to the EU MDR, and that hospitals already using remanufactured devices should double-down and expand their reprocessing programs.”

### **Healthcare is particularly wasteful and toxic.**

Last December, the Journal [Health Affairs](#) concluded that the health sector is “responsible for 4.6% of global greenhouse gas emissions” and that the “vast majority of health care global greenhouse gas emissions originate in the supply chain.” Hospital’s over-reliance on “disposable” or “single-use” medical devices and equipment over the last 30 years has been further exacerbated by the challenges associated with COVID. And supply chain vulnerabilities have demonstrated that reliance on a disposable culture may not always provide healthcare workers with the supplies they need.

### **LCA Finds Reprocessing Superior in 13 of 16 Environmental Impact Categories**

The authors researched 16 “Impact Categories” and found reprocessed catheters superior to original catheters in 13, including:

**Ozone Depletion.** Reprocessed devices reduced ozone depletion by nearly 90% (89.7%).

**Climate Change.** Reprocessed catheters cut CO<sup>2</sup>-equivalent emissions in half (50.4%).

**Photochemical Ozone Formation.** Reprocessed devices reduced human health-impacted photochemical ozone formation by 72.8%.

**Respiratory Inorganics.** Reprocessed devices reduced disease incidents from respiratory inorganics by 66.8%.

**Cancer Human Health Effects.** Reprocessed catheters reduced cancer causing human health effects by 60.9%.

Disinfectants and cleaning agents used for reprocessed catheters were found to elevate two environmental impacts for reprocessed devices compared to original catheters: land use for agriculture associated with citric acid cleaning agents (15.2%) and eutrophication freshwater use (25.1%). The authors note however, that certain environmental inputs for original catheter production are unknown and thus not entered in their calculations.

The environmental analysis confirms that reprocessing leads to a significant reduction in global warming, when studying the “cradle to grave” impact of water, sterilization gasses, detergents and disinfectants, packaging materials, electricity (excluding the electricity used in original plastic production which is unknown by the authors).

### **Global Warming Impact of Plastic Manufacturing for Original “Single-Use” Medical Devices**

The Fraunhofer researchers found that the global warming impact of plastic manufacturing for original EP catheters, which is avoided when using their reprocessed counterparts, accounts for more CO<sup>2</sup> than the entire process of reprocessing, including the impact of cleaning the devices.

### **Global Use and Impact of Reprocessed SUDs**

Reprocessing “single-use” medical devices, which requires regulated, commercial companies to collect, clean, sterilize, test and return devices for use again at hospitals is already in place at over 7,600 hospitals in the United States, Canada, Germany, England, Israel and Japan, yet only a small percent of the devices that can legally be reprocessed are. In the EU and the US, over 300 devices labelled for “single-use” are CE marked and cleared by FDA respectively for reprocessing.

Sustaining value after the end of life for SUDs helps hospitals to lower costs, as reprocessed devices cost significantly less than their original counterparts. Use of the reprocessed devices helps hospitals redirect money to pressing needs, such as, toward fighting COVID-19.

### **About Fraunhofer-Gesellschaft**

The Fraunhofer-Gesellschaft, headquartered in Germany, is the world’s leading applied research organization. As a pioneer and catalyst for groundbreaking developments and scientific excellence, Fraunhofer helps shape society now and in the future. Founded in 1949, the Fraunhofer-Gesellschaft operates 74 institutes and research institutions throughout Germany. The majority of the organization’s 28,000 employees are qualified scientists and engineers, who work with an annual research budget of 2.8 billion euros. Of this sum, 2.3 billion euros is generated through contract research.

### **About AMDR**

The Association of Medical Device Reprocessors is the global trade association for the regulated, professional single-use device reprocessing and reprocessing industry. For 20 years, AMDR has promoted reprocessing as an important healthcare strategy that helps hospitals and healthcare providers increase quality, reduce costs, and strengthen the supply chain. AMDR protects the interests of its members in regulation, legislation and standard-setting.

AMDR members include [Innovative Health](#), [Medline Renewal](#), [NEScientific](#), [ReNu Medical](#), [Stryker Sustainable Solution](#), [Sustainable Technologies](#) (a Cardinal Health Business), and [Vanguard AG](#). Having played a key role in the establishment of the reprocessing industry, AMDR continues to push the global medical technology industry and lead the way for reprocessing to play a defining role in the evolution and use of new device technologies.

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