

Medical Adapter Gripping Tool

Inventor: David Keeler

The Innovation: Children's Mercy, Kansas City has developed a gripping tool to hold a hub and safely facilitate the release of an adapter, Luer-Lok™, ENFit® connector, needleless connector, and/or other connectors used with catheters or other medical devices that have become difficult to disconnect.

Background:

Various types of catheters are commonly used to provide patient care. For example, an estimated 35-40 million central line days take place in intensive care units per year in the US. Catheters typically include a hub and adapter with a fractional-turn quick connector (such as a Luer-Lok™) for selective attachment and detachment of the adapter relative to the hub. This connection serves to keep the IV system closed to the outside environment.

However, because the hub and adapter are relatively small compared to the size of an adult's hands, it can be difficult to manually disconnect the hub and adapter. The use of common medical tools, such as clamps, for firmly grasping the hub or adapter may easily damage the catheter, such that catheter removal and replacement is required. Catheter replacement typically requires a surgical procedure and incurs additional treatment costs. A risk of infection may also result from catheter damage or contamination of the catheter system.

Innovation:

The innovation is a gripping tool with a pair of flexible levers which include a separate gripping element that is designed to safely hold the connector hub without the hub cracking or otherwise breaking. The exterior surface of the lever is textured to reduce slippage.

The tool is intended for use by health care professionals who are trained to use and care for central lines and other catheters as a routine part of patient care. These health care professionals include physicians, and nurses. The

device is also intended to be used by outpatient adult patients and caregivers who continue to utilize a central line or other catheter once discharged from the hospital.



Advantages:

- Designed to avoid cracking or breaking adapter hubs
- Designed for use with different size hubs
- Also useful for care providers with arthritis or generally poor grip strength

Status:

- Provisional Patent Application filed April 15, 2021
- PCT Application filed April 15, 2022
- US, Canada and EPO applications filed September/October 2023

Licensing: Children's Mercy, Kansas City seeks to have discussions with companies that are interested in licensing the innovation.

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