Health problem addressed
These devices are intended to treat renal failure, partially replacing kidney function by removing metabolic wastes through selective diffusion across the peritoneum.

Product description
These devices consist of a machine that performs automated dialysis cycles (for CCPD), a catheter and a sterile disposable tubing system.

Principles of operation
These devices perform three main types of PD therapy: continuous ambulatory peritoneal dialysis (CAPD), intermittent peritoneal dialysis (IPD), and continuous cyclic peritoneal dialysis (CCPD). The type of therapy indicated depends on the physician’s preference and proficiency in the required aseptic technique as well as on the patient’s condition. The most commonly used type of therapy is CAPD, in which the patient manually infuses dialysate from a portable plastic bag that is usually worn until the dialysate is drained several hours later. CAPD is inexpensive and can be performed almost anywhere if strict aseptic technique is used. IPD can be performed manually by the patient, a family member, or a nurse; it can also be performed automatically with a PD unit.

Operating steps
A typical dialysis cycle consists of filling the peritoneal cavity with a volume of dialysate, letting the dialysate remain within the cavity for a selected period of time (dwell time) while diffusion and osmosis occur, and draining the spent dialysate from the peritoneal cavity.

Reported problems
Peritonitis (inflammation of the peritoneum) is the most serious complication of PD therapy. Poor aseptic technique often introduces bacteria that are present on the hands or on the skin surrounding the catheter site to the PD tubing, which can result in peritonitis and catheter-site or tunnel infections. User error has resulted in the accidental introduction of disinfectant into the peritoneal cavity. Also, arthritic or very weak patients may have difficulty handling the tubing sets and drainage equipment.

Use and maintenance
User(s): Patient
Maintenance: Medical staff; technician; biomedical or clinical engineer
Training: Initial training by dialysis department staff

Environment of use
Settings of use: Hospital; dialysis clinic; home
Requirements: Stable power source (if using continuous cycler-assisted peritoneal dialysis)

Product specifications
Approx. dimensions (mm): 215 x 455 x 385
Approx. weight (kg): 17
Consumables: Dialysate and administration sets
Price range (USD): 7,000 - 13,000
Typical product life time (years): 5 - 7
Shelf life (consumables): variable and single use

Types and variations
Continuous ambulatory peritoneal dialysis (CAPD); continuous cycler-assisted peritoneal dialysis (CCPD)