

FlexiPump™ Independent Flushing System

Value analysis of common manual flushing systems in reprocessing departments



Instrument reprocessing departments or functions are often viewed by their management and C-suite teams as either cost centers or as potential financial risks when surgical site infections (SSI's) occur. Managers overseeing these reprocessing departments should be methodical in presenting financial analyses' of how improvements in their processes can reduce and prevent these unnecessary or costly mistakes.

The cost of poor manual cleaning outcomes

Surgical site infections (SSIs) are a significant risk when manual cleaning outcomes aren't properly followed. In a January 2022 report by the Centers for Disease Control (CDC), SSI's are 2- to 11-fold higher in their risk of mortality over other healthcare associated infections (HAI's), extend hospital stays for patients up to 9.7 days, with a cost of hospitalization increased by more than \$20,000 per admission^{1,2,3}. These figures alone cannot include or quantify the pain and difficulty of a loved one suffering from an SSI, and the significant toll on the patients and their families.

Increasing risks and complexities in instrument reprocessing

Most sterile processing or gastroenterology departments reprocess complex devices, some of the most notorious being flexible scopes. Flexible scope technology continues to advance in design and construction. Consider the Pentax® 90i video colonoscopes, with up to eight (8) channels and 1700mm long working length (air, suction, water channels are all defined as channels by regulatory bodies). Or the Olympus® EVIS EXERA II Duodenovideoscope, with seven (7) channels, and up to 1240mm in working length, which faced a voluntary recall event in 2016 for replacement of forceps elevator mechanisms. While the duodenovideoscope can be safely used and EtO sterilized, nothing precludes effective manual cleaning before mechanical cleaners and sterilization for effective patient outcomes, especially with complex devices such as flexible scopes.

The need for automated flushing

With multiple long, dark lumens where biofilm easily forms, the proper flushing of endoscope channels is fundamental. Departments may consider syringes for the flushing of endoscope channels, but manufacturers and guidelines may provide alternative guidance. Manual methods of cleaning also introduce variability in practice, with one technician or nurse flushing differently than another, or certain channels accidentally being forgotten to be flushed.

Automated flushing systems may also be a viable option. Multiple options exist on the market today. Breaking apart a system's true cost can help department managers choose the right solution, as well as understand other hidden savings by comparing system capabilities.

Improve capacity and quality systems

Any department can reap the financial and productivity benefits of using a FlexiPump™ Independent Flushing System for their manual cleaning practices.

	FlexiPump Features	Syringes	Scope Buddy Plus	Savings/Value to You
Productivity	<ul style="list-style-type: none"> Hands-free, automated flushing Flush multiple lumens/channels at once Simple 4-button operation; start lumen flushing immediately 	<ul style="list-style-type: none"> Laborious Time-consuming process One lumen/channel at once Done completely by hand 	<ul style="list-style-type: none"> Flush multiple scope channels at once Decreased time flushing; increased time setting up programs & flushing settings 	<ul style="list-style-type: none"> Increased throughput & volume without sacrificing quality Reduced technician time-per-device in both flushing and set-up
Adaptability	<ul style="list-style-type: none"> Varied tubing styles to adapt to nearly any lumened device or scope 	<ul style="list-style-type: none"> Not adaptable to all lumen sizes or port types 	<ul style="list-style-type: none"> Used only with endoscope channels; not adaptable with robotics, orthopedic, or other complex lumened instruments 	<ul style="list-style-type: none"> System assures repeatable, consistent flushing for entire channeled inventory
Cost of Use	<ul style="list-style-type: none"> Extended 2-year warranty; no cost to resolve problems within the first year of service No preventative maintenance required Tubing which is replaced monthly for infection control and flow validation integrity (\$100 monthly cost) 	<ul style="list-style-type: none"> No tubing required; most large healthcare vendors supply at minimal cost 	<ul style="list-style-type: none"> Tubing which is replaced daily for infection control (\$450-750 monthly cost) 	<ul style="list-style-type: none"> Reduction in consumable spending for the same flushing capabilities (\$367 - 667 savings per month)
Ease of Use	<ul style="list-style-type: none"> Plug-and-play design requires minimal training Four-buttons; easy-to-learn functions 	<ul style="list-style-type: none"> Pull-plunge method for flushing easy to use, but leaves room for inconsistent practice & skipping IFU steps 	<ul style="list-style-type: none"> Integrated features provide more capabilities, but at higher implementation & service costs 	<ul style="list-style-type: none"> Easy to maintain and use system that can provide immediate flushing benefits for sterile processing and GI

Works Cited

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2. Zimlichman, E., et al., "Health Care-Associated Infections. A Meta-analysis of Costs and Financial Impact on the US Health Care System". *JAMA Intern Med*, 173(22): (2013): 2039-46.
3. "Surgical Site Infection Event (SSI)." *Centers for Disease Control, CDC*, Jan. 2022, <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiHkoTMT9r3AhV9g3IEHciCAE8QFnoECAkQAQ&url=https%3A%2F%2Fwww.cdc.gov%2Fnhns%2Fpdfs%2Fpscmanual%2F9pscscscurrent.pdf&usg=AOvVaw1pfxZuFL-VI2tIEfXGHiDP>.
4. U.S. Food and Drug Administration. (2016, January 8). *Class 2 device recall Evis Exera II duodenovideoscope Olympus TJFQ180V*. [accessdata.fda.gov](https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfres/res.cfm?id=142937). Retrieved April 22, 2022, from <https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfres/res.cfm?id=142937>

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