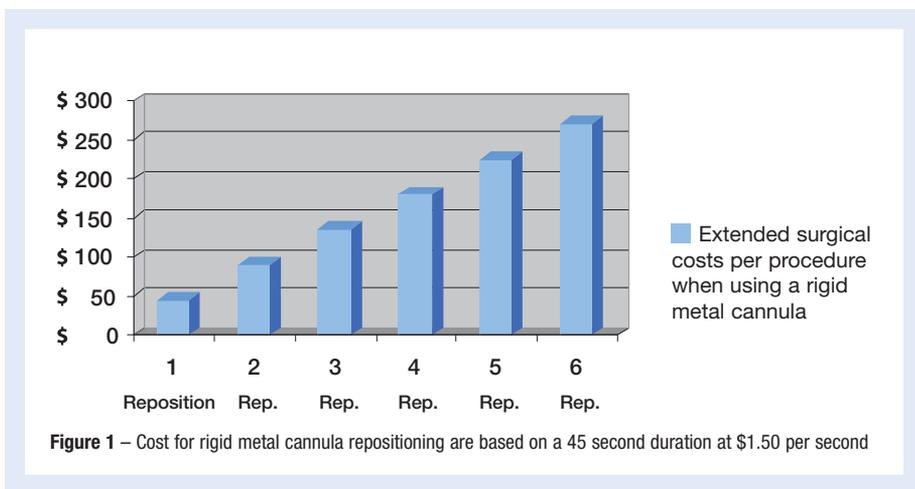


## Cannuflow® ClearVu™ 2.7, Inflow-Outflow Cannula: A flexible cannula enhances procedure efficiency to improve OR cost-effectiveness



### Summary

It is widely agreed in the medical industry that operating room (OR) costs range from \$1.00 to \$2.00 per second and are on the rise. Therefore, devices that can enhance OR efficiency and help streamline surgical processes, while also improving procedure safety and effectiveness, offer hospitals and surgical centers a tangible advantage in managing costs.

The Cannuflow ClearVu 2.7 inflow-outflow cannula is designed to maximize sterile fluid flow and visibility during three-portal arthroscopic knee procedures. The high-performance, progressively flexible design and plastic polymer construction of the cannula allows it to conform to the contour of a knee joint through a full range of motion. This device significantly reduces the need for the frequent and time-consuming repositioning to regain fluid flow and clarity that is often necessary when using a rigid metal cannula. A single repositioning of a metal cannula during an arthroscopic procedure can take from 45-to-60 seconds to perform. Each time this process is averted there is a direct OR cost savings that can range from \$45 to \$90. (see Figure 1).

### BACKGROUND

Traditional rigid metal inflow-outflow cannulae often get blocked, obstructing fluid flow and, therefore, visibility when a knee is repositioned during a procedure. To remedy the interrupted flow, a surgeon must pause the procedure and adjust the rigid cannula. The ClearVu flexible cannula effectively eliminates this need to change the position of the inflow-outflow cannula to maintain

maximum fluid flow and visibility. To assess the time/cost advantages of the ClearVu cannula versus a rigid metal cannula, an evaluation team of surgeons' specializing in arthroscopic knee procedures was established to compare how each cannula type affects the time-span and, therefore, cost of a procedure.

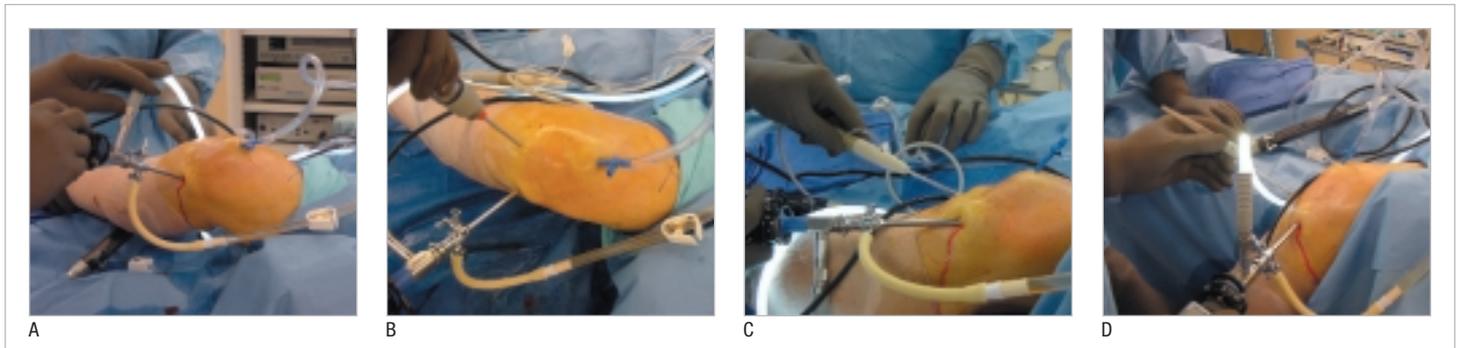
### OBSERVATIONS

Depending on the type of arthroscopic knee procedure performed and the number of times the knee is adjust for access to the surgical area, it was discovered that the need to reposition a rigid metal cannula to recover fluid flow and re-establish clear visibility occurred as many as six (6) times per procedure, with durations of 30-60 seconds per interruption.

At an average of three (3) interruptions, each lasting 45 seconds, per procedure, the cost in extended surgical time when using a metal cannula was \$135 per procedure. With a ClearVu flexible cannula the necessity to pause during any type of procedure for adjusting of the inflow-outflow cannula was eliminated. Consistent fluid flow and surgical-area visibility remained clear when a knee was repositioned. The four rows of openings for fluid allowed debris to be easily removed and clarity maintained even when a joint was bent into a figure-four position (see Figure 2, A). "The ClearVu not only made the procedure move along much faster and smoother," comments Dr. Gordon Levin<sup>2</sup>, "but it reduced the aggravation level I often feel when having to repeatedly stop a surgery to adjust a metal cannula."

### COST OF OWNERSHIP

The ClearVu cannula is a single-use product that does not incur any on-going cost-of-ownership. It arrives sterile and requires no



**Figure 2** – During clinical evaluation, the ClearVu did not require repositioning when manipulating the knee joint through a full range of motion.

additional handling. A rigid metal cannula must be cleaned, re-sterilized, and repackaged after each use. Multiple metal cannulae need to be maintained in inventory to ensure availability while other devices are being processed. Stocking idle cannulae demands a substantial cash outlay and contributes to the per-procedure cost-of-ownership. The performance of a metal cannula degrades over time and it must be periodically repaired, re-sharpened, and eventually replaced. The estimated per-surgical use expense of purchasing and maintaining a metal cannula inventory is greater than \$5 per device.<sup>3</sup> Due to the rising cost of OR time more surgical facilities are looking for ways to streamline their sterilizing requirements. "Hospital staffs are stressed and stretched, and we need to simplify cleaning tasks," says Janet M. Barber, MSN, RN, FAAFS, clinical nursing consultant for Hill-Rom Inc. " During basic design processes, manufacturers must consider how much time will be required for proper cleaning."<sup>4</sup> A single-use flexible cannula offers the ideal solution.

## CONCLUSION

The use of a rigid metal cannula for inflow-outflow third-portal knee arthroscopies can significantly impede surgical performance and extend procedure time as well as incur hidden maintenance and handling costs. The ClearVu flexible cannula helps to establish increased cost efficiency and an improved standard of OR care while more than paying for itself the first time a proce-

dures does not have to be interrupted to reposition the cannula.

## REFERENCES

<sup>1</sup> Evaluations of the ClearVu cannula and traditional metal cannulae were performed by surgeons at the Los Gatos Surgical Center, Los Gatos, CA; Good Samaritan Hospital, San Jose, CA; Silicon Valley Surgery Center, Los Gatos, CA; Bascom Surgery Center, Campbell, CA.

<sup>2</sup> Dr. Gordon Levin is Chief of Orthopaedic Surgery at Good Samaritan Hospital, San Jose, and maintains a private orthopaedic surgical practice in Los Gatos, CA.

<sup>3</sup> The formula for evaluating handling costs for a rigid metal cannula is based on information provided by Bascom Surgery Center and Los Gatos Community Hospital:

Avg. fully-burdened operating cost for surgicenter/hospital = \$187.55/hr or \$3.13/min. Standard sterilization load of 10 instruments per tray; avg. handling time 15mins or 1.5mins/ instrument. Cost for processing from post-op to packaging = \$4.69. Purchase price for new metal cannula (avg. cost of the three industry leading products) = \$219; avg. lifecycle of metal cannula = 2 years or 500 uses; amortized cost = \$.44/use. Maintenance costs (sharpening/repairs \$25 x 3/lifetime) = \$.15/use. Sterile pouch cost = \$.05/use. Total cost- of-ownership per use (\$4.69 + \$.44 + \$.15 + \$.05) \$5.33

<sup>4</sup> *Nooks and Crannies: The Breeding Grounds for Bacteria* By Kelly M. Pyrek <http://www.infection-controltoday.com/articles/261feat1.html>

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