VeinViewer®

CHRISTIE

# Evidence Based Technology

VeinViewer is the only device of its kind that can boast the extent and quality of clinical results.

**Using VeinViewer Vision To Increase the Identification of Peripheral Intravenous Access Targets in Pediatric Patients**
Conclusion: HCP's were able to identify more total venous catheter options and more optimal catheter segments using VeinViewer Vision than using sight or sight plus palpation. There was a trend suggesting greater effectiveness of VeinViewer in participants with greater BMI and more subcutaneous fat.

| Dorsum of Hand N=120 | Sight | Sight + Palpation | VeinViewer | Improvement (vs Sight + Palpation) |
|---|---|---|---|---|
| Total Veins | 4.2 | 5.1 | 8.2 | 61% |
| Optimal Catheter Segments | 1.4 | 1.8 | 2.8 | 56% |

**Peer Reviewed - Efficacy of VeinViewer in Pediatric Peripheral Intravenous Access: A Randomized Controlled Trial**
Conclusion: VeinViewer facilitated peripheral venous access for pediatric patients with difficult veins, which enhanced first-attempt success rates.

| First Attempt Success | Standard Technique | VeinViewer |
|---|---|---|
| Patient with DIVA (Difficult Intravenous Access) Score > 4 | 25% | 58% |
| Overall Success | 67% | 72% |

**Peer Reviewed - A Randomized Trial of the VeinViewer Versus Standard Technique for Placement of Peripherally Inserted Central Catheters**
Conclusion: VeinViewer improved successful placement with the most benefit seen in infants of greater GA.

| Successful PICC Placement | Traditional Method | VeinViewer | Improvement |
|---|---|---|---|
| Attempt 1 | 59% | 64% | 5% |
| Attempt 2 | 27% | 44% | 17% |
| Attempt 3 | 80% | 100% | 20% |
| Overall Success | 75% | 86% | 11% |

**Peer Reviewed - VeinViewer-assisted Intravenous Catheter Placement in a Pediatric Emergency Department**
Conclusion: While no results were statistically significant for the overall study group, subgroup analysis of children age 0 to 2 years suggests that VeinViewer may decrease the time of PIV placement.

| Geometric mean time to place PIV, seconds | VeinViewer n=163 | Standard n=160 | Improvement In Time |
|---|---|---|---|
| 0-17 Years Old | 132 sec | 145 sec | 10% |
| 0-2 Years Old | 121 sec | 167 sec | 38% |

**The Impact that VeinViewer Vision Made on Patient Satisfaction, with a Little Help From "Christie"**
Conclusion: VeinViewer technology along with other new initiatives has helped to significantly improve the patient experience at Franciscan St. James Health Hospital.

| Press Ganey Scores of Med/Surg Unit Related to Skill of Nurse Starting IV | |
|---|---|
| Prior to VeinViewer | Low 30th Percentile |
| 1 Month Post VeinViewer Implementation | 93% |

**Peer Reviewed - Making the Invisible Visible: Near-Infrared Spectroscopy and Phlebotomy in Children**
Conclusion: VeinViewer can assist healthcare workers in training with the localization of peripheral veins. It is likely to increase the first puncture success rate, therefore reducing the amount of pain inflicted on acutely or chronically ill children. The equipment also benefits patients in whom venous access is particularly difficult, for instance, in obese children or those with poor perfusion.

| | Better | Same | Worse |
|---|---|---|---|
| General Effectiveness | 72% | 20% | 8% |
| Visibility of Peripheral Veins | 76% | 24% | 0% |
| Acceptance by Families | 100% | 0% | 0% |

continued on back >

**Peer Reviewed - A Biomedical Device to Improve Pediatric Vascular Access Success**
Conclusion: The use of vein viewing device significantly improved the first attempt venipuncture success rate, decreased the number of attempts per patient, and decreased procedure time for the study population. The device was well received by patients, families, and staff.

| PIV Placement | Traditional Method | VeinViewer |
|---|---|---|
| First Attempt Success Rate | 49% | 80% |
| Mean # of Attempts | 1.97 | 1.29 |

**The Use of VeinViewer for Botulinum Toxin Injection in Facial Wrinkles**
Conclusion: VeinViewer is an adjunctive method for increasing the safety of Botox to the face, reducing the incidence of hematomas, and enhancing the effectiveness of the procedure, avoiding the waste of botulinum toxin to a vessel. VeinViewer will reduce patient discomfort and enhance the safety and precision of the procedure.

| 18 Pen marks were made without VeinViewer to indicate where Botox should be injected. | |
|---|---|
| Did Not Overlay Vein (checked with VeinViewer) | 7 (39%) |
| Near Vein (checked with VeinViewer) | 3 (17%) |
| Overlay Vein (checked with VeinViewer) | 8 (44%) |

**SSM Cardinal Glennon Childrens Medical Center**
Conclusion: VeinViewer very clearly demonstrated enhancements in average number of attempts, average time needed for venous access and 1st attempt success rates. Moreover, these improvements seem to have led to the increase in patient satisfaction.

| | Traditional Method, n=48 | VeinViewer Assisted Method, n=40 |
|---|---|---|
| Mean Number of Attempts per IV | 2.08 | 1.18 |
| 1st Attempt Success Rate | 31% | 83% |
| Mean Time per IV (minutes) | 17.06 | 6.6 |
| Patient Satisfaction Score | 1.85 | 4.07 |

**Lifeblood Biological Services**
Conclusion: VeinViewer demonstrated an enhancement in the ability to successfully access veins in previously unsuccessful DVA patients and could potentially increase the efficacy of healthcare workers, increase patient satisfaction, and increase the number of blood donors.

| Donors (previously turned away) | Achieved with VeinViewer | First-stick success rate |
|---|---|---|
| n=29 | 100% | 100% |

**Jefferson Memorial Hospital**
Conclusion: VeinViewer assisted in demonstrating a positive difference in averages number of attempts, average time needed for venous access, and 1st attempt success rate. Additionally, VeinViewer appears to have assisted in providing a sizeable boost in patients satisfaction scores.

| | Traditional Method, n=32 | VeinViewer Assisted Method, n=32 |
|---|---|---|
| Mean Number of Attempts per IV | 2.00 | 1.13 |
| 1st Attempt Success Rate | 28% | 88% |
| Mean Time per IV/PICC (minutes) | 15.09 | 4.75 |
| Patient Satisfaction Score | 1.89 | 4.19 |

**Peer Reviewed - Dermatologic Surgery, Vein Imaging: A New Method of Near-Infrared Imaging, Where a Processed Image is Projected onto the Surface of the Skin for the Enhancement of Vein Treatment**
Conclusion: The device could identify veins that were invisible to the naked eye and too shallow for ultrasound detection. VeinViewer may help locate feeder veins and may also help with various types of vein treatments.

| Total Naked-Eye Marks | Total VeinViewer Marks | Total Combined Marks | Percentage of marks made with VeinViewer only |
|---|---|---|---|
| 103 | 211 | 314 | 67% |

For a full list of data and sources please contact Christie, 1 877 SEE VEIN or info@veinviewer.com

info@veinviewer.com www.veinviewer.com
CHRISTIE MEDICAL HOLDINGS, INC. | 1256 UNION AVE. 3rd FL. MEMPHIS, TN 38104 | 1-877-SEE-VEIN (1-877-733-8346) TOLL FREE

© 2012 Christie Medical Holdings, Inc.