MedLite ID®

Illuminating Patient Safety

MedLite ID Introduction

Infusion Medication Line Safety Device

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We understand that managing patients with multiple IV-infusions can be challenging and frustrating. Studies conducted at DSU School of Nursing, and an Intermountain Healthcare hospital showed MedLite ID improved patient safety and reduced the stress associated with the complexity of multiple IV infusion lines by making the line-tracing task faster and easier.

Let me show you how MedLite ID can help your facility to significantly improve patient safety and staff efficiency while reducing clinician stress.

Corporate Overview

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- Founded in 2018
- Co-Inventors: Dr. Wayne Provost and Jeffrey Stewart
- Innovation Partners:
  - University of Notre Dame
  - DSU
- Unique patented technology
  - 4 Utility Patents include any technology that lights the IV line
  - Applied for 6 International Patents
- FDA Class I 510(k) Exempt

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DSU™

MedLite ID: Born From Tragedy

MedLite ID was developed in memory Dr. Provost's son, Dusty

Product Dedicated to Dusty
"In Memory of Dusty"
Etched on Every Product

- In 2008, Dr. Wayne Provost's 16-year-old son, Dusty, was diagnosed with acute myelogenous leukemia
- Infusion line confusion was a consistent problem in the ICU and during his normal hospital stays
- On any average day, Dusty would have five IV lines, and as many as eleven different infusion lines
- The frustration experienced and time spent by health care providers trying to locate the proper infusion line was astonishing, and Dr. Provost knew *there had to be a better, less stressful way to identify the proper line*
- After watching clinicians struggle with finding the main medication line, Dr. Provost was determined to find a way to help. After much research he determined, and studies support, that lighting the main medication line was the best approach

The Problem

- 440,000 medical error deaths per year
  - Medication errors alone harm 1.5 million people yearly in the U.S.
  - In 2017 The ECRI Institute named infusion errors its **#1 Healthcare Technology Hazard**
  - In 2017, 21% of Americans reported they or a family member had experienced a medical error and 31% reported someone else whose care they were closely involved with experienced an error
- 60% of all IV infusions contained one or more errors
  - 65% of mistakes are related to IV tubing labeling
- Kane-Gill Clinical Study: Each additional IV medication line increased the likelihood of an adverse drug event by 3%

Infusion Confusion or Spaghetti Syndrome

The Problem (continued)

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- Over 90% of hospitalized patients receive infusion therapy, yet today's smart pumps do little to reduce stress for clinicians or decrease the potential for error when working with multiple infusion lines
- In 2017 ECRI Institute named infusion errors the #1 Healthcare Technology Hazard and in 2015 named line mix-ups as the 4th biggest Patient Safety Hazard
- Infusion-related errors are estimated to add more than $2 billion annually to U.S. healthcare costs
- VA Malpractice: $845 million in 10 years
- Lack of training- most nursing programs do not prepare nurses to manage multiple infusions
- "Spaghetti Syndrome" can cause medical errors and increased stress on clinicians- especially in emergency situations

Increased Secondary Costs

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Medication errors are a Sentinel Event (aka Never Event) and providers will not be reimbursed for costs associated with the event

- Lawsuits associated with wrong route errors or drug interactions - average payout in a medical malpractice claim nationally is approximately *$242,000*
- Average cost to hospital for wrongful death, if settled out of public domain, *$5.0M (Direct Quote from multi-hospital CFO)*
- Medical errors have a significant impact on the clinician making the error and the cost of replacing a registered nurse can range from *$22,000 to $64,000*

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The MedLite ID Solution

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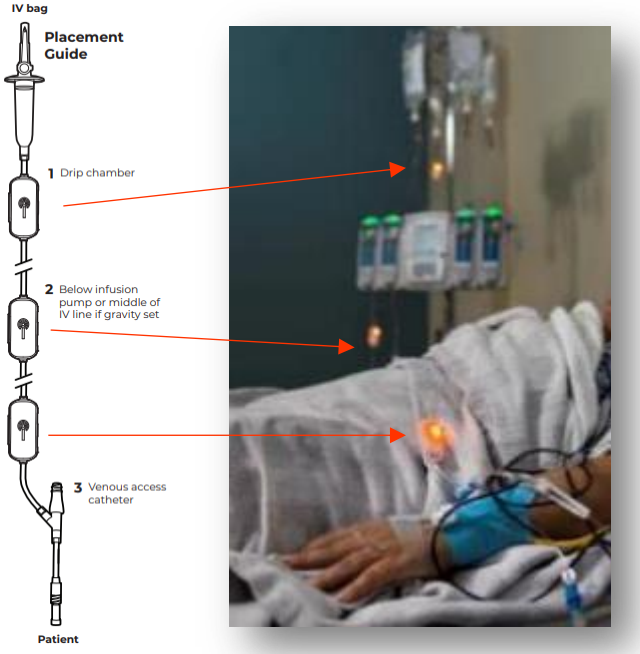
- A simple-to-use, disposable medical device enabling clinicians to accurately and efficiently identify a single medication infusion line versus similar infusion lines in all light settings
- The world's only patient safety solution that lights the emergency medication infusion line to prevent medication errors related to multiple infusions
- Practically eliminates the need for line-tracing and ADE's
- Safer, more efficient and less stressful than current practices using tape and a marker or pre-printed labels
- Virtually no training required

MedLite ID Devices

- Can significantly reduce the risk of infusion confusion by providing lit indicators at:
  - Drip chamber
  - Below infusion pump or middle of IV line if gravity set
  - Venous access catheter
- Product features:
  - Auto-on and device pairing
  - Easy use and omni-directional: pressing any of the devices, lights all three devices
  - Disposable: discarded along with the infusion line
  - Battery life: at least 90 plus hours after activation
  - *Lights start to blink as battery gets low…great indicator to remind clinician to replace IV line if overlooked at 72-hour mark*
- Within seconds, MedLite ID will improve *patient safety , clinician efficiency and reduces clinician stress*



Improving Safety

- Provides two methods of differentiation: unlit and lit
- Safer than current practice using tape and a Sharpie
- Honors “Do No Harm”
- Significantly decreases complexity associated with multiple infusions

Improving Efficiency

- Reduces the time to identify the main medication line by approximately one-minute or 34%
- Takes seconds to apply and use, making training quick and easy
- Improves efficiency and lessens confusion during patient transports and shift changes
- Attaching three Medlite ID devices is faster than using three pieces of tape and Sharpie or pre-printed labels

Reducing Clinician Stress

- Mitigates “infusion confusion” or “spaghetti syndrome” that occurs when IV lines get tangled or hidden by bedding or patient gowns
- Makes primary medication line identification less disruptive and improves patient satisfaction
- Results in less stress on staff, particularly during emergency situations

How MedLite ID Reduces Exposure to COVID -19

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During this unprecedented and incredibly challenging time, identifying new technologies and solutions is more important than ever.

Hypothesis: A mid-sized hospital ICU unit has 16 beds. If 60% of those patients have an average of eight infusion lines, that would be 9.6 beds. Each patient's IV site is checked every two-hours when the nurse enters the room to reposition the patient.

- **9.6 patients with four lines would result in reducing time of exposure by approximately 57.6 minutes per unit per 12-hour shift**
- **Line-tracing for these patients with eight lines could result in approximately two hours reduction in exposure to COVID-19 per unit per 12-hour shift**

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Clinical Research

DSU Study: Methodology

- Ten DSU School of Nursing students were used for this study: each student was asked to inject a relaxing drug into the patient's medication line
- Each student was timed from start to finish
- Nurses were taken to Room #2 and trained on the MedLite ID
- MedLite ID was added to the medication line
- The process was repeated with all four lines changed so that nothing was the same as in the previous situation
- The student was asked to go back into the patient's room and inject the medication into the medication line
- There was no cross over of information from one student to another

DSU Study: Results

- All ten nursing students decreased the time it took them to find the medication line with an overall time savings of 34%, or nearly one minute
- All ten nursing students also expressed how the MedLite ID reduced their stress levels
- Average time savings per trial was 57.3 seconds with just 4 lines
- Overall, 51% nursing productivity/ efficiency improvement
- Greatly reduces stress of clinician identifying main medication infusion line

Trial Number	Seconds Without	Seconds With	Seconds Improvement	Min/Sec Improvement	Percentage Time Savings	Efficiency Improvement
Trial #1	213	101	112	1:52	52.58%	111%
Trial #2	200	148	52	0:52	26.00%	35%
Trial #3	89	61	28	0:28	31.46%	46%
Trial #4	139	93	46	0:46	33.09%	49%
Trial #5	120	110	10	0:15	8.33%	9%
Trial #6	190	149	41	0:56	21.58%	28%
Trial #7	118	87	31	0:31	26.27%	36%
Trial #8	228	89	139	2:19	60.96%	156%
Trial #9	188	144	44	0:44	23.40%	31%
Trial #10	160	110	50	0:50	31.25%	45%
Totals	1,645	1,092	553	9:33	33.62%	51%

Medical Tape Lab Study

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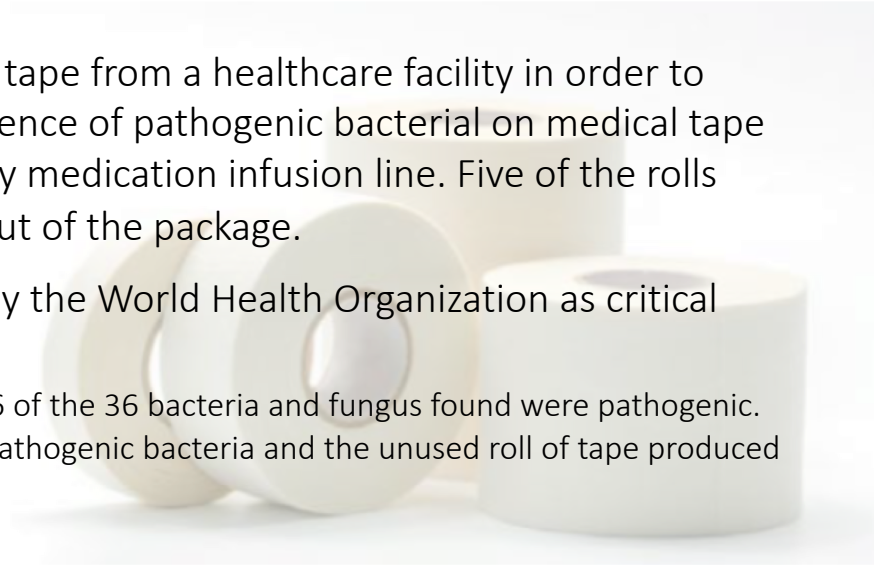
- Currently nurses use medical tape and a Sharpie to identify the primary line.
- Multiple studies, including one done by MedLite ID, showed significant risk of cross-contamination when using medical tape.
- While MedLite ID cannot eliminate the risk as nurses also use tape in other ways, but we can reduce the risk.
- **Our Study:** MedLite ID acquired six rolls of medical tape from a healthcare facility in order to conduct tests on the tape to understand the prevalence of pathogenic bacterial on medical tape commonly used to identify the primary / emergency medication infusion line. Five of the rolls were in use by nurses and the sixth roll was fresh out of the package.
- **Results.** Of identified bacteria, one was identified by the World Health Organization as critical and the another was listed as serious.
  - 80% of the used rolls tested positive for pathogens and 16 of the 36 bacteria and fungus found were pathogenic. Four of the five used rolls tested positive for a variety of pathogenic bacteria and the unused roll of tape produced non-pathogenic bacilli.

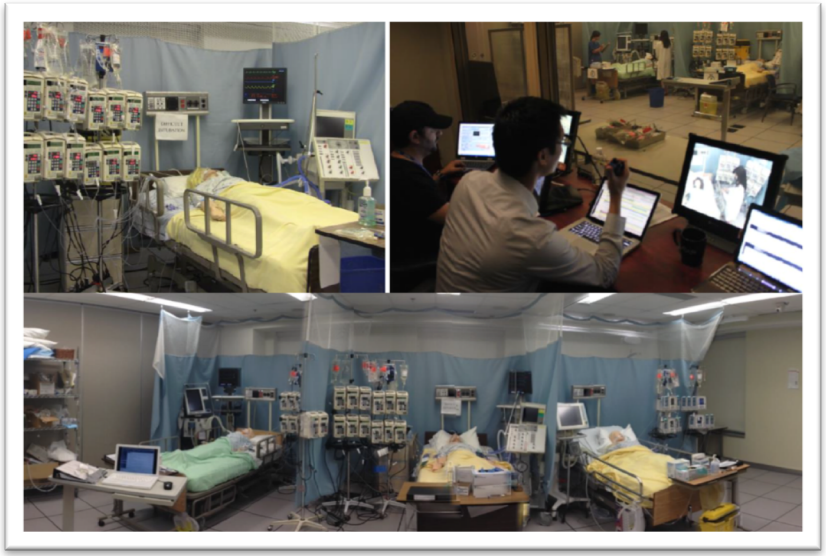


Ontario Study

The Ontario Health Technology Advisory Committee commissioned HumanEra to generate evidence-based recommendations to reduce the hazards associated with administering multiple IV infusions to a single patient.

This was a five-part study including:

- Phase 1: Environmental Scan
  - Phase 1a: Situation Scan
  - Phase 1b: Practice and Training Scan
- Phase 2: Risk Prevalence and Mitigation
  - Phase 2a: Ontario Survey
  - Phase 2b: Laboratory Study
- Phase 3: Knowledge Translation



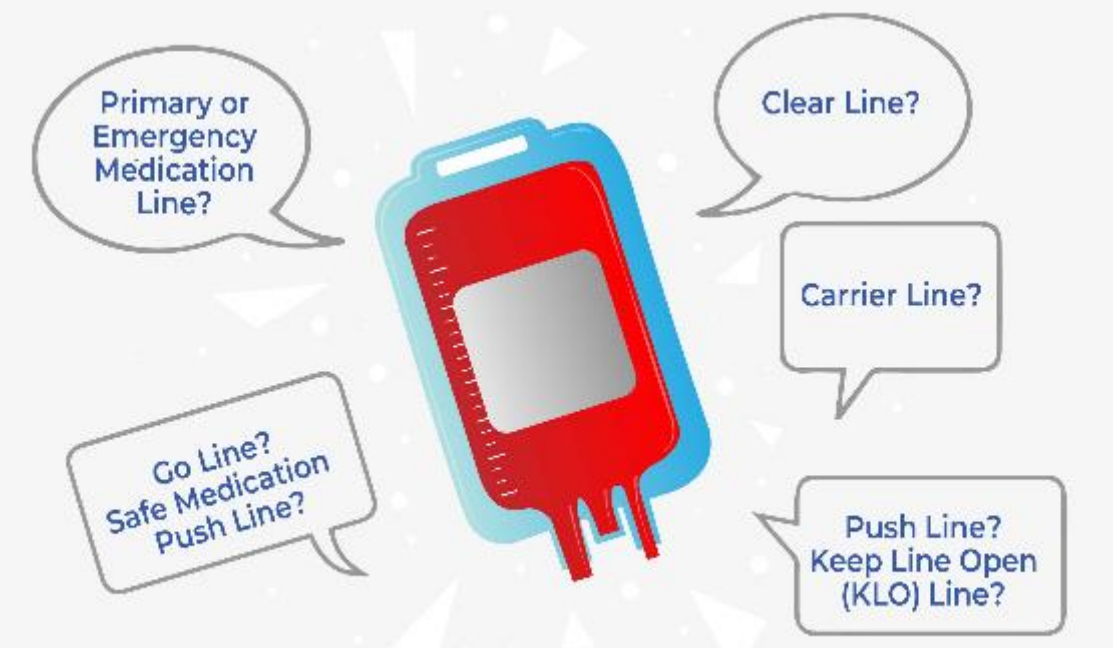
Light the Line

Ontario Study: Recommendations

The recommended interventions included:

- When an emergency medication line and infusion pump are set up, primary IV tubing should be ***labelled at the injection port closest to the patient*** (multiple locations)
- The label ***should be prominent and visually distinct from all other labels*** in the environment
- Technology can minimize the potential for infusion confusion, ***specifically with light-linking systems***

MedLite ID meets or exceeds ALL recommended criteria



Which Line Do I Attach MedLite ID To?

- Unfortunately, due to a lack of standardization in the industry, the line that the MedLite ID attaches to is called a variety of things
- Most of our messaging use the primary/emergency medication infusion line- typically the saline line
- Other names we've heard are:
  - Saline line
  - Push line, go push line, go line
  - Clear line
  - Carrier line
  - Safe line, safe push line
  - Keep Line Open (KLO)
- Have you heard of other names?

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The Market

Target Audiences

MedLite ID is designed to reduce infusion confusion and is recommended any time there are four or more lines used. In some cases, MedLite can be useful with as little as two lines.

- OR / Anesthesiologists and CRNAs
- ICU
- COVID-19 Units
- CCU / Step-down Unit
- NICU, PICU
- Oncology
- Transport
- Any unit where multiple IVs are used

Competitors

- MedLite ID is the only device available that lights the primary medication line
- Replaces the current practice to identify the safe line of using medical tape and a Sharpie or pre-printed labels


Questions
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Answers
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