

# A Game as a Tool for Learning a Surgical Procedure

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Getinge DACH/Benelux





**GAMES FOR HEALTH EUROPE  
2025**

# Disclosure

I work for Getinge as a clinical product manager

# Endoscopic Vessel Harvesting

An important step towards  
Minimal Invasive Cardiac Surgery

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# This is Getinge

As the world's population grows and ages, and the number of people with multiple illnesses increases, so do the challenges in healthcare. Cardiovascular diseases remain among the leading causes of death globally, requiring more effective and comprehensive solutions.

At Getinge, employees globally share a belief that everyone deserves the best possible care, with as little impact on the environment as possible.

By offering hospitals and life science institutions advanced technological solutions and expertise, Getinge not only contributes to improved clinical outcomes, but also more efficient workflows and reduced resource utilization.

Ultimately, it is about saving and improving lives, by making life-saving technology accessible to more people.

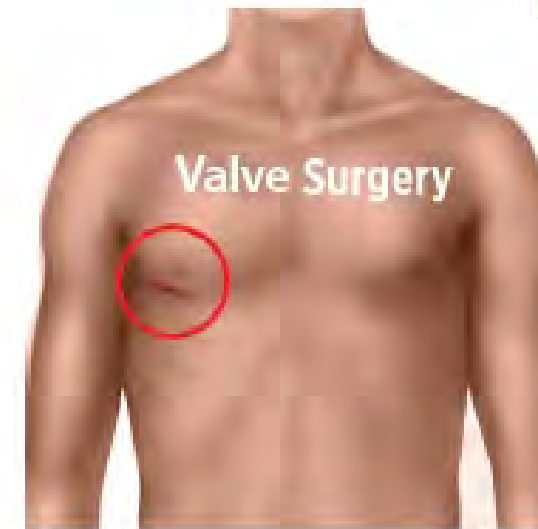
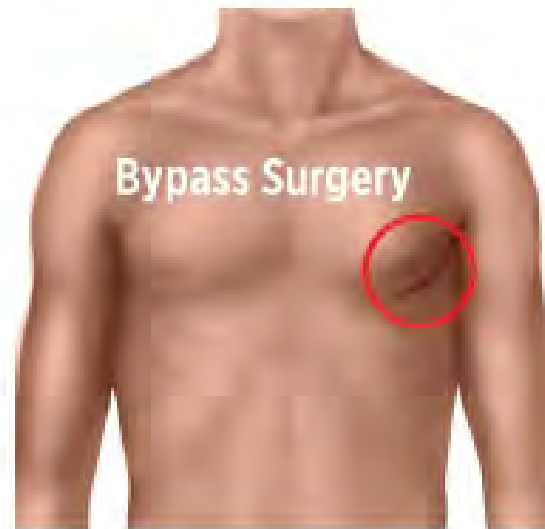


# minimally invasive surgery = less (wound) complications

**Traditional Open Heart  
Surgery - Incision through  
Chest bone**



**Minimally Invasive Cardiac Surgery (MICS)  
- Incision sparing Chest bone in between the Ribs**





## The hunt for the smallest incision



# But the longest incision in surgery !

the saphenous vein harvest site incision  
for coronary artery bypass grafting





# Examples of wound complications

pain  
swelling  
cellulitis  
haematoma  
Skin necrosis  
Infections

- abscess

# Wound Complications

68 yo man, 2-vessel CAD (emergent, AMI)  
Extensive debridement (cleaning of the wound)  
Vacuum-assisted closure  
Antibiotics  
Dressing change every 3-5 days  
Removal additional necrotic tissue  
Skin grafts (3)

Discharged **5 WEEKS** after initial debridement

Treatment can be extensive and costly



Post-saphenectomy wound complication before debridement: Infected hematoma and complete dehiscence of the cutaneous suture line.

# Options for saphenous vein harvesting

Maximum single a 2-cm incision



Upper leg + lower leg = 60 cm length of vein

**Why** perform endoscopic vessel harvesting

**Who** is doing endoscopic vessel harvesting

**How** is endoscopic vessel harvesting being done

**When** do we endoscopic vessel harvesting

# Why Perform Endoscopic Vein Harvesting

## The Top 4 Reasons To Perform EVH

### 1. Complication

- EVH significantly reduces wound complications/infection

### 2. Clinical outcomes

- EVH provides equivalent long-term revascularization outcomes

### 3. Costs

- EVH reduces costs of care
- Faster recovery
- Shorter hospitalization
- Reduced wound care treatment requirements

### 4. Patient Satisfaction

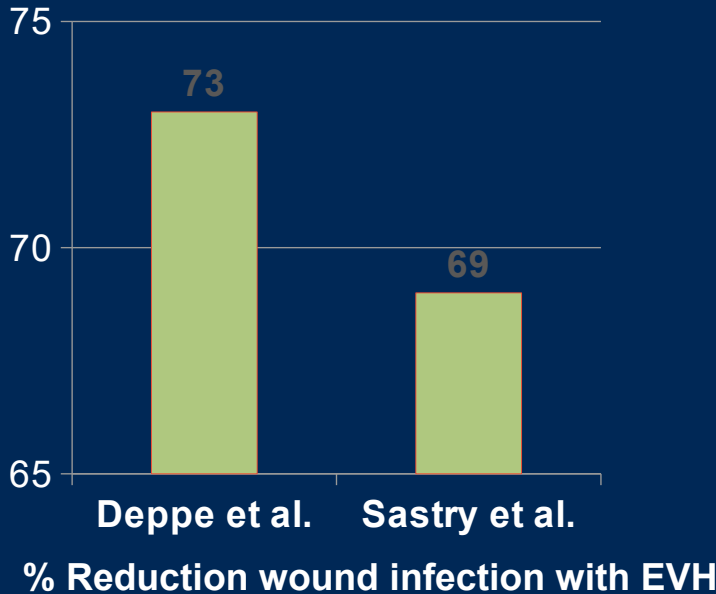
# How much reduction in wound infection ?

EVH reduces wound infection ~ 70%

## Meta-analyses of EVH vs. OVH technique<sup>1,2</sup>

	# Patients # Studies	Odds Ratio for Infection with EVH	
<b>Deppe et al (2013)</b>	27,789 patients 43 studies	0.27	EVH ↓ 73%
<b>Sastry et al (2013)</b>	267,525 patients 44 studies	0.31	EVH ↓ 69%

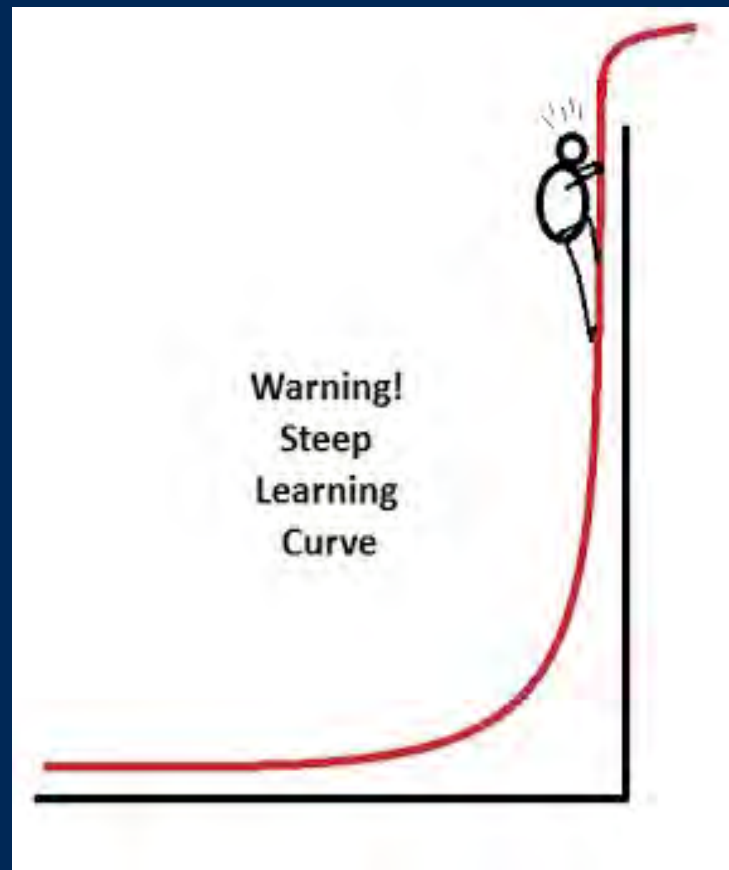
14



1. Deppe AC, Liakopoulos OJ, Choi YH, Slotosch I, Kuhn EW, Schermer M, Stange S, Wahlers T. Endoscopic vein harvesting for coronary artery bypass grafting: a systematic review with meta-analysis of 27,789 patients. J Surg Res. 2013 Mar;180(1):114-24.  
 2. Sastry P, Rivinius R, Harvey R, Parker RA, Rahm AK, Thomas D, Nair S, Large SR. The influence of endoscopic vein harvesting on outcomes after coronary bypass grafting: a meta-analysis of 267,525 patients. Eur J Cardiothorac Surg. 2013 Apr 12.

# Disadvantage

- learning curve >20 patients
- Not “see one, do one, teach one”
- Only at the end of the EVH procedure you can see the end result



# How to set up a successful EVH program





It is all about training and education !



# Who does what?



© CHOP

GETTING IT

# Who

- The lita take down,( artery from the chest wall) done by the surgeon
- The GSV or the Radial artery is after the Lima the second important part of the whole CABG procedure
- The outcome of the patient will depend on it
- But who takes down the GSV or the Radial artery ?

# Who is dedicated

- The cardiac surgeon: skilled, expensive not motivated, will stay available
- The physician in training : skilled expensive not motivated, will stay less available
- The physician not in training : not skilled expensive not motivated, no stay available
- The physician assistant (PA): skilled less expensive highly motivated, will stay available
- Your favorite OR nurse skilled less expensive highly motivated, will stay available

# So who do we choose ?

May vary in different hospitals/countries, but this is what we do in the Netherlands !

- 1 The OR Nurse
- 2 The Physician Assistant
- 3 The Cardiac Surgeon
- 4 The Cardiac Surgeon in training
- 5 The Doctor not in training ( but has to stay > 6 months )

# How is endoscopic vessel harvesting being done



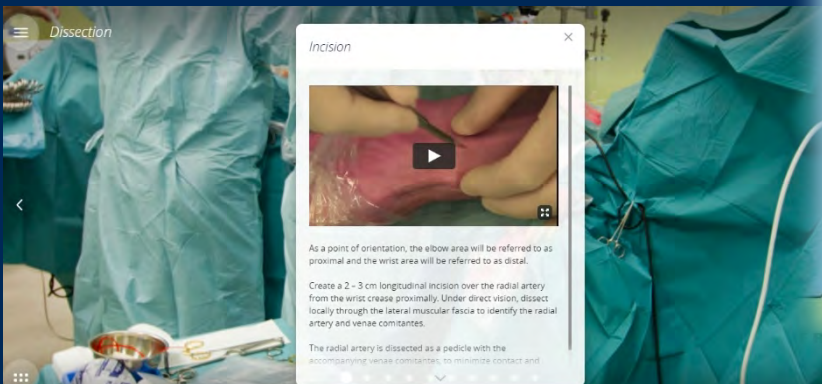
**When** Always, no contra indication for endoscopic vessel harvesting



**Getinge has more than 25 years of  
experience creating a  
comprehensive training program for  
EVH**

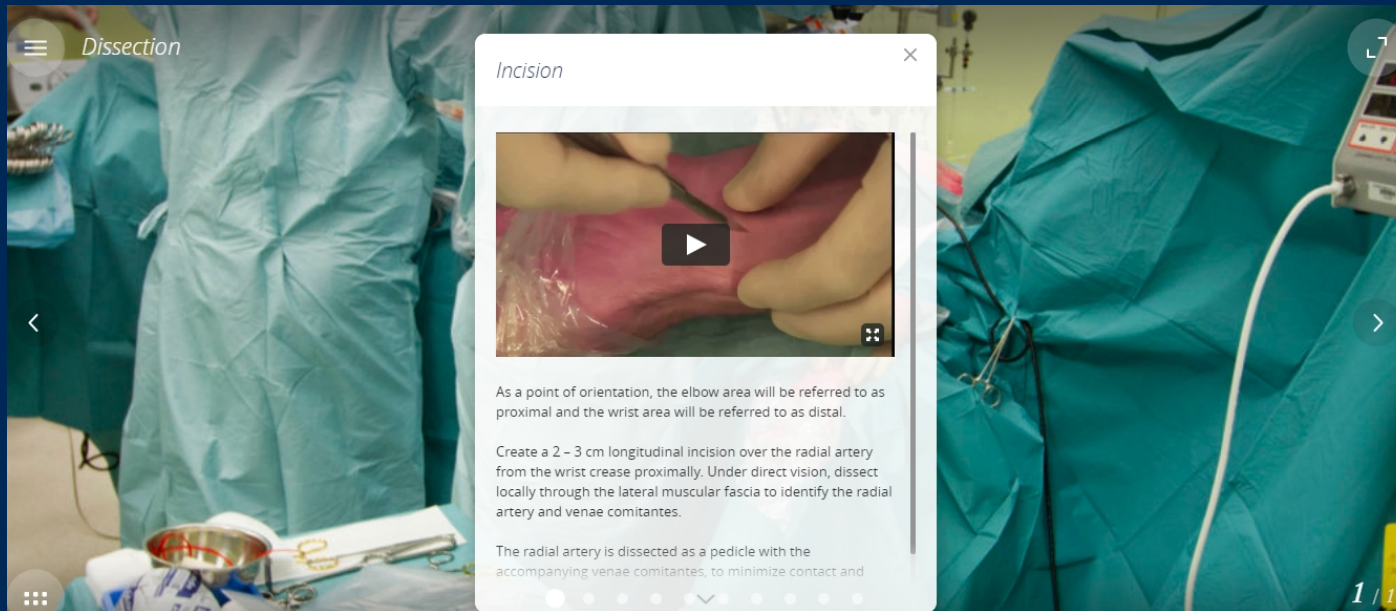


# Getinge EVH training program



# E-learning

For every new harvester, online e-learning has been developed to make the learning curve as short as possible.

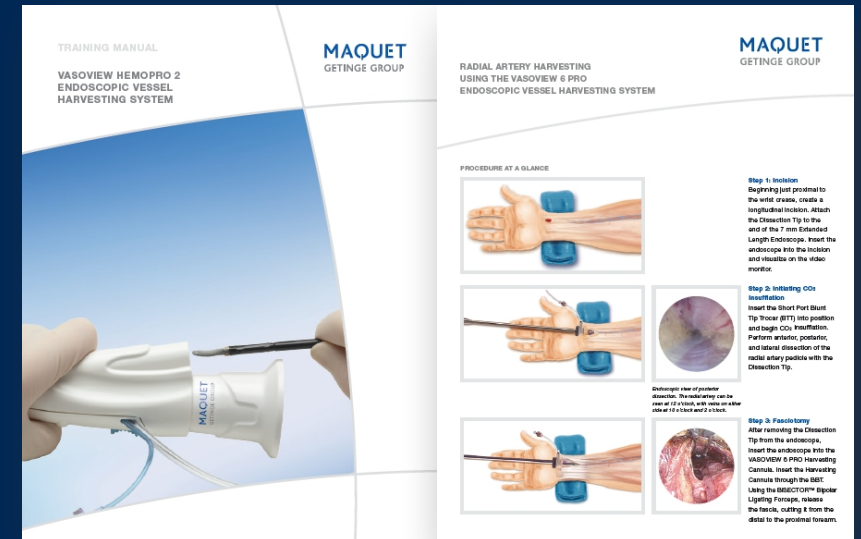


The screenshot shows a mobile application interface for a surgical procedure. At the top, there is a hamburger menu icon and the word "Dissection". A video player is open, titled "Incision", showing a close-up of a hand being incised. Below the video, there are three paragraphs of text:

As a point of orientation, the elbow area will be referred to as proximal and the wrist area will be referred to as distal.

Create a 2 - 3 cm longitudinal incision over the radial artery from the wrist crease proximally. Under direct vision, dissect locally through the lateral muscular fascia to identify the radial artery and venae comitantes.

The radial artery is dissected as a pedicle with the accompanying venae comitantes, to minimize contact and



The screenshot shows a page from a training manual. The title is "RADIAL ARTERY HARVESTING USING THE VASOVIEW 6 PRO ENDOSCOPIC VESSEL HARVESTING SYSTEM". The page includes the MAQUET GETINGE GROUP logo and the text "TRAINING MANUAL VASOVIEW HEMOPRO 2 ENDOSCOPIC VESSEL HARVESTING SYSTEM".

**PROCEDURE AT A GLANCE**

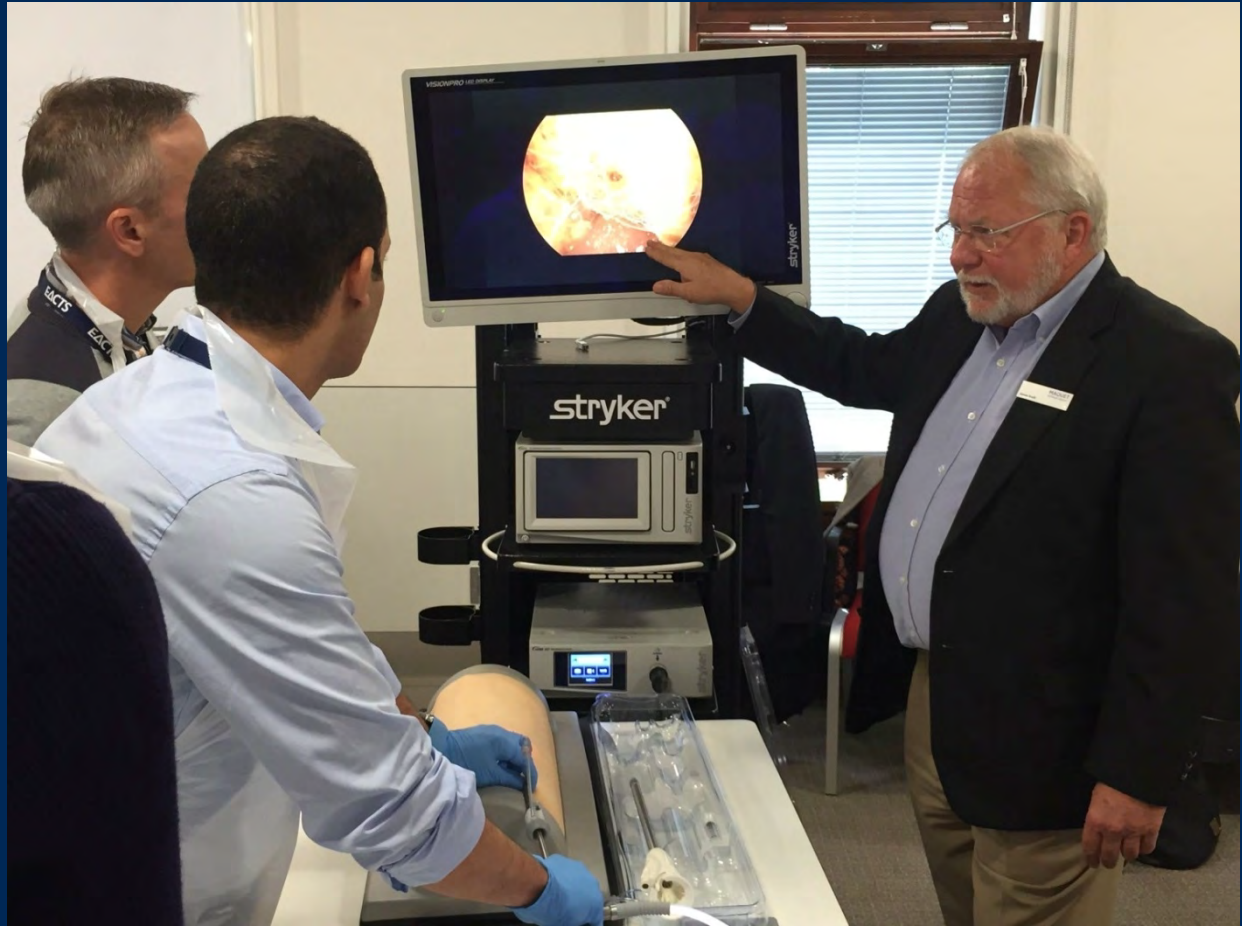
**Step 1: Incision**  
Beginning just proximal to the wrist crease, create a longitudinal incision. Attach the Connection Tip to the end of the 7 mm Extended Length Endoscope. Insert the endoscope into the incision and visualize on the video monitor.

**Step 2: Initiating CO2 Insufflation**  
Insert the Short's Port Blunt Tip Trocar (BTT) into position and begin CO<sub>2</sub> insufflation. Perform anterior, posterior, and lateral dissection of the radial artery pedicle with the Connection Tip.

**Step 3: Fluoctomy**  
After removing the Connection Tip from the endoscope, insert the endoscope into the VASOVIEW 6 PRO Harvesting Cannula. Insert the Harvesting Cannula through the distal. Using the RESECTOR™ Bipolar Ligating Forceps, release the pedicle, cutting it from the distal to the proximal towards

# Leg model Training

Prior to the clinical training there is always a training on the leg model and video observation



# Cadaver courses



# Hands-on Workshops

Medisch Spectrum Twente  
(Enschede, Netherlands)

- One week hands-on training (up to 10 cases)
- vein or radial harvesting training available



# In-house training by qualified and experienced harvesters (>1500 cases)



Martine Kromhof Leisen - Microsoft PowerPoint

Hulpmiddelen voor afbeeldingen

Opmaak

Normal

Presentatieweergaven

Modelweergaven

Diagrams

Overgangen

Animaties

Diavoorstelling

Controlleren

Beeld

Font PDF

Kleur

Grijswaarde

Zwart-wit

Alle vensters

Tragsgewijs

Spitsing verplaatsen

Andere venster

Macro's

Dia's

Overzicht

1

Martine Kromhof Leisen


Surgical Care Practitioner – MST Hospital, The Netherlands

**Martine Kromhof Leisen**

Surgical Care Practitioner – MST Hospital, The Netherlands

General experience

- Surgical Care Practitioner since 2006
- Proctor since 2010
- Languages Dutch, English, German




Clinical experience EVH

- > 1000 veins
- > 300 radial arteries

EVH systems

- Hemopro 1
- Hemopro 2
- Vasoview 6
- Vasoview 6 pro



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Klik hier om notities toe te voegen

Dia 1 van 1

Getinge\_16-9

Engels (Groot-Brittannië)

11:37

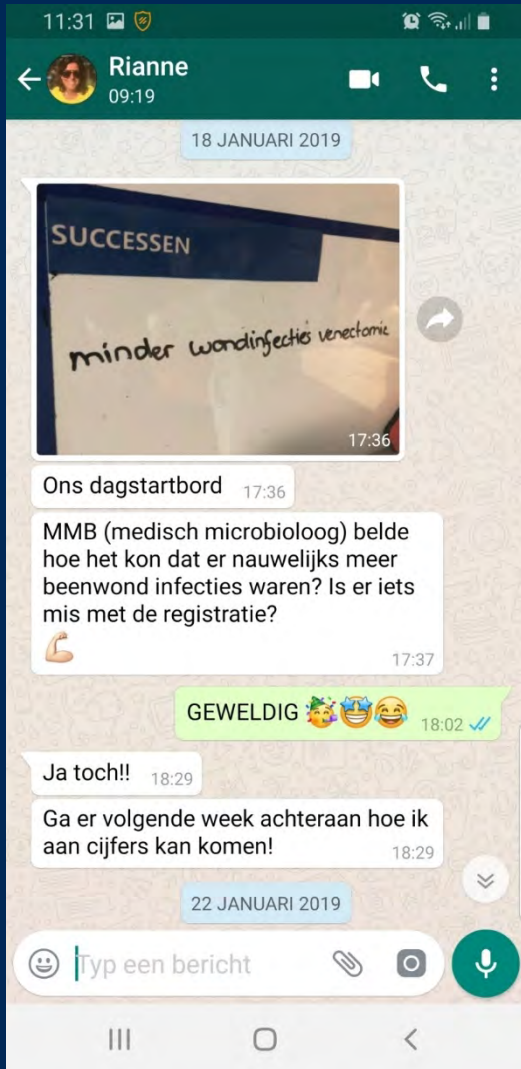
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# The first 50 cases (ideal situation)

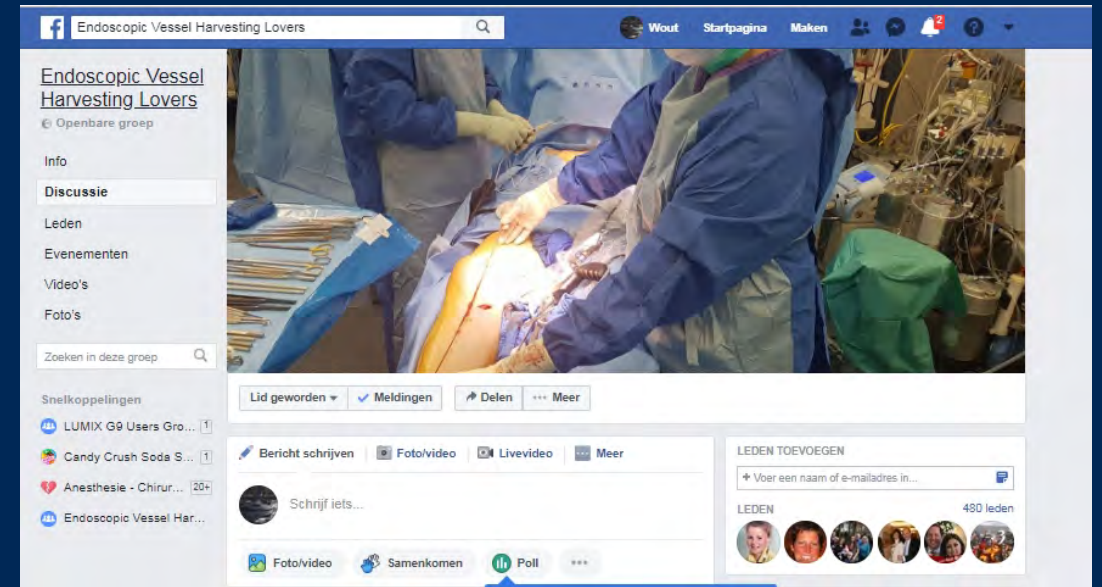
- First observe a couple of cases
- Visit one of the trainings centers (Enschede or India or maybe in your own country)
- The first 10 cases with a proctor ( but always try to review them)
- The next 10 cases on your own
- Follow up training by a proctor 2 days
- Celebrate your 50th case
- Train the next person

# People are proud in what they do



Less woundinfections venectomie

MMB (Medical Microbiologist) called how it is possible that there are no legwound infections anymore. Is there something wrong with the registration ?





But what if we can really reduce the learning curve and make it more fun



Let's this time do it different





## GetPlaying EVH Interactive Training Game

The gaming platform for novice to experienced harvesters

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# Introducing the GetPlaying EVH Interactive Training Game

The GetPlaying EVH Platform was developed by harvesters for harvesters to learn endoscopic vessel harvesting (EVH) skills on an exciting and fun gaming system. Novice to experienced harvesters can setup a profile and earn points, compete with colleagues, and gain valuable EVH experience.

An additional training modality to develop skills anywhere



Getinge's training path for EVH includes a variety of modalities to assist clinicians in gaining necessary skills to perform EVH. These range from leg models, case observations, cadaver training and live case proctoring. GetPlaying can complement any of these modalities with a personalized game.



## Personalized learning on Hemopro 2 Device

The GetPlaying EVH Interactive game is a fun and rewarding platform to learn endoscopic vessel harvesting maneuvers. The platform develops a learner's hand-eye coordination and dexterity using the Vasoview Hemopro 2 device as the controller.

Follow the rabbit on a journey by navigating diverse terrain, completing tasks, and earning points to acquire EVH skills in a relaxed setting that simulates the EVH procedure.



## Features to teach EVH motion

- Practice controlled movements and stabilization of the EVH devices
- Focus on a monitor while learning hand-eye coordination.
- Handle the endoscope along many axes.
- Operating the C-ring for optimal use.
- Manipulate the Harvesting Tool to accurately align and cut vessel branches
- Maximize repetition and error correction while playing

## The GetPlaying platform facilitates efficient learning and EVH adoption



Plug and play with no additional equipment



Easily portable to play anywhere



Suitable for various endoscopy education levels



Smart, personalized learning



Supplements training curriculum



Sandbox learning with non-dominant hand



Seamlessly integrates to enhance existing training



Focus on skills acquisition with immediate feedback

To learn how to incorporate the GetPlaying EVH Interactive Training Game into your EVH training program, contact your local Getinge Representative.

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# The team behind the game



US 20240321141A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0321141 A1**  
**van Nierop et al.** (43) **Pub. Date: Sep. 26, 2024**

(54) **ELECTRONIC TRAINING SYSTEM AND METHOD FOR SURGICAL PROCEDURES**

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(73) Assignee: **Maquet Cardiovascular LLC**, Wayne, NJ (US)

(21) Appl. No.: **18/612,102**

(22) Filed: **Mar. 21, 2024**

#### Related U.S. Application Data

(60) Provisional application No. 63/491,403, filed on Mar. 21, 2023.

#### Publication Classification

(51) **Int. Cl.**  
**G09B 23/28** (2006.01)  
**G09B 5/02** (2006.01)

(52) **U.S. Cl.**  
CPC ..... **G09B 23/285** (2013.01); **G09B 5/02** (2013.01)

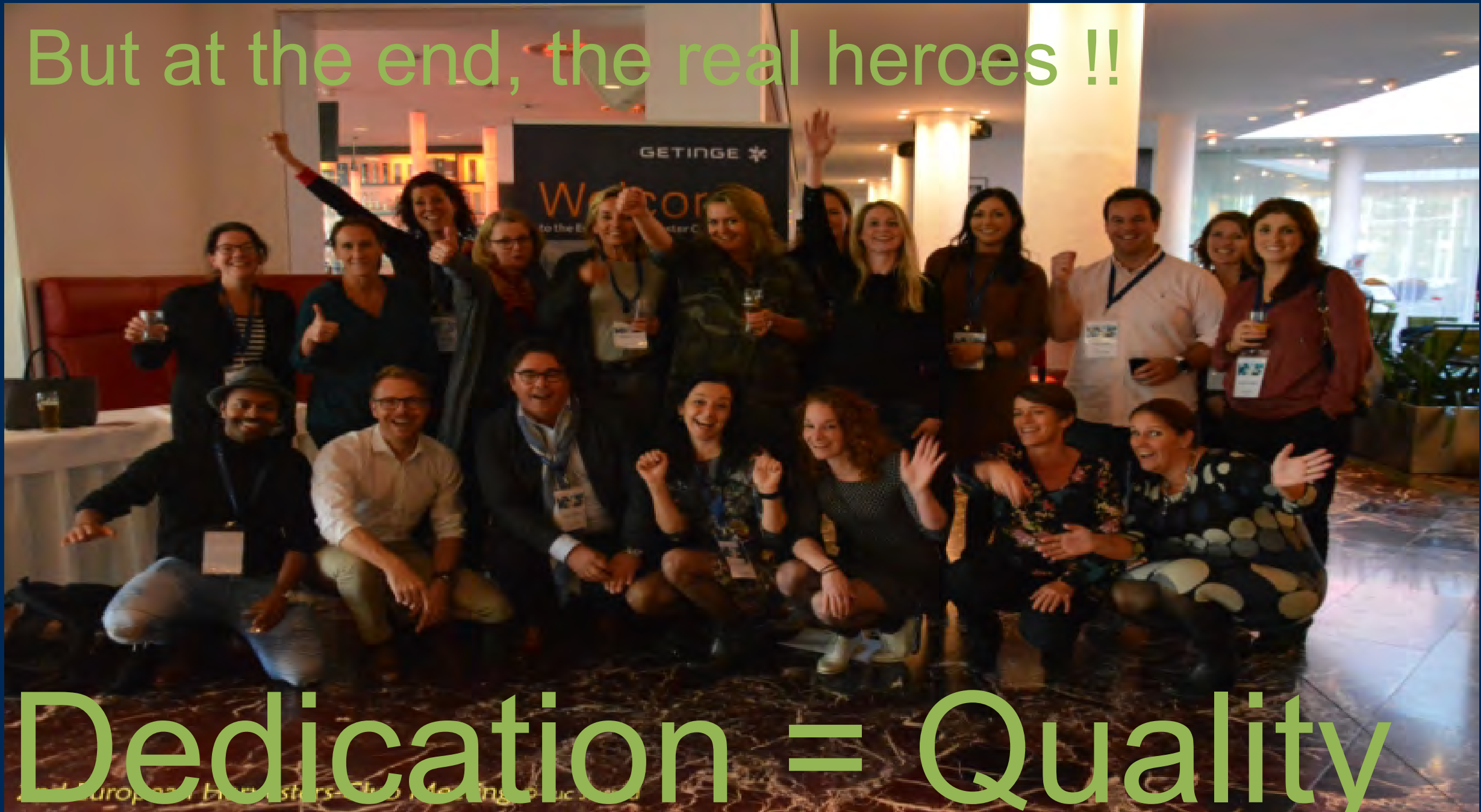
(57) **ABSTRACT**

A training system that allows a user to practice performing movements commonly performed during an endoscopic vessel harvesting surgical procedure includes a manipulation device representative of components of a vessel harvesting device. The manipulation device includes a first tool having a main handle configured to be grasped by a user and a second tool having an auxiliary handle including a shaft inserted through an opening in the main handle. The training system also includes a video display and a controller in electronic communication with sensors of the manipulation device and the video display. The controller is configured to: receive and process signals from the sensors of the manipulation device to determine movement information for the manipulation device and cause at least one visual indication to be provided on the video display at a position on the video display based, at least in part, on the determined movement information.

# Conclusion

- Endoscopic Vessel Harvesting is an excellent option for patients
- Vasoview Hemopro 2 is a proven safe and user-friendly system
- Getinge offers adequate and comprehensive training and support
- With the new game, Getinge is investing into influencing the learning curve
- Making a game is fun, but playing the game is even more fun
- Bunnies should be protected animals

But at the end, the real heroes !!



Dedication = Quality



Thank you for your attention





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