



# Manual Vacuum Aspiration (MVA) for Uterine Aspiration

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# Disclosures

- Ipas Senior Clinical Consultant
  - Ipas is no longer directly involved with manufacturing or marketing the MVA
- Acknowledgements
  - Thank you to Ipas & DKT for providing materials for this presentation.

# Objectives

**By the end of this session, participants should be able to:**

1. Review the current recommend methods for uterine evacuation.
2. Describe the use of MVA for evacuating the uterus.
3. Review key information regarding the device and common pitfalls.
4. Practice assembling, disassembling and using the MVA.

# Uterine Evacuation Methods

**Recommended methods for providing uterine evacuation before 13 weeks gestation:**

- Vacuum aspiration (electric or manual aspiration)
- Medical methods



# Sharp Curettage: An Obsolete Method

- WHO: “Dilatation and curettage (D&C) is an obsolete method of surgical abortion and should be replaced by vacuum aspiration and/or medical methods.”
- International Federation of Gynecology and Obstetrics (FIGO) supports vacuum aspiration (VA) and medical methods over sharp curettage (SC)
- Health systems should replace SC with VA and medical methods
- SC is known to increase blood loss, pain, procedure time and long-term complications compared to VA



# Ipas MVA Plus<sup>®</sup>

## FDA-approved Clinical Indications



- Abortion
- Post-abortion care
  - Incomplete
  - Missed abortion
- Endometrial biopsy

Original research article

## Introduction of the dilation and evacuation procedure for second-trimester abortion in Vietnam using manual vacuum aspiration and buccal misoprostol

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### Abstract

**Background:** The dilation and evacuation (D&E) procedure was modified for use in a low-resource setting where access to electric vacuum aspiration is limited.

**Method:** In this demonstration project, buccal misoprostol is used for cervical preparation, followed by evacuation using manual vacuum aspiration (MVA) and forceps. Senior physicians at the Hanoi Obstetrics and Gynecology Hospital were trained in D&E and subsequently conducted 439 D&E procedures.

**Results:** The primary outcomes were efficacy and safety. Secondary outcome measures include efficacy of buccal misoprostol for cervical preparation prior to D&E and the feasibility of MVA for use in the D&E procedure.

**Conclusion:** Successful abortion took place in 100% of the cases. Three major complications occurred. This procedure may be appropriate in other low-resource settings lacking safe, effective abortion services in the second trimester.

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*Keywords:* Abortion; Dilation and evacuation; Buccal; Misoprostol; Manual vacuum aspiration

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# Vacuum Aspiration (MVA or EVA)

- Extremely safe
  - Major Complications <1%
- Effective
  - 98 to 100%
- Less costly as can be performed as an outpatient
- General anesthesia not needed
- Acceptable to women



# MVA = Cost Savings

- All studies compared MVA use in an office setting to D&C in an operating theater
  - MVA use was for treatment of both incomplete and elective abortion
  - Costs below are on a per procedure basis

Country	Avg. Cost using MVA (USD)	Avg. Cost using D&C (USD)	% Savings with MVA
US <sup>1</sup>	\$793	\$2,333	66%
El Salvador <sup>2</sup>	\$54	\$62	13%
Mexico <sup>3</sup>	\$53	\$143	63%
Kenya <sup>4*</sup>	\$4.17	\$9.62	57%
Tanzania <sup>5</sup>	\$1.74	\$4.33	60%

1. Rocconi, Rodney, et al. Management strategies for abnormal early pregnancy: A cost-effectiveness analysis. *J Reprod Med*. 2005;50:486-490.
2. Koontz, Stephanie L., et al. Treating incomplete abortion in El Salvador: Cost savings with manual vacuum aspiration. *Contraception*. 2003; 68: 345-351.
3. Hu D, Grossman D; Levin C, Blanchard K, Goldie S. Cost-effectiveness analysis of alternative first-trimester pregnancy termination strategies in Mexico City. *BJOG* 2009; 116: 768-779.
4. Johnson, B.R., et al. Costs of Alternative Treatments for Incomplete Abortion. *Policy Research Working Papers*, WPS1072, Washington DC: The World Bank, Population and Human Resources Department, 1993b.
5. Magotti, R.F., et al. Cost-effectiveness of managing abortions: Manual vacuum aspiration (MYA) compared to evacuation by curettage in Tanzania. *East African Medical Journal* 1995; April: 248-251

\*Average of costs at 2 hospitals

# Essential Elements for VA procedure

- Women-centered care
- Infection prevention practices
  - Clean touch technique
  - Personal protective barriers
  - Proper waste disposal
  - Environmental cleanliness
  - Proper instrument processing (0.05% chlorine solution)
- History & clinical assessment including pelvic/bimanual exam
- Counseling & consent
  - Including post-care contraceptive counseling
- Prophylactic antibiotics
- Pain management
- VA procedure
- If desired, provision of contraceptive method of choice
- Post-procedure care

# Steps of the MVA Procedure

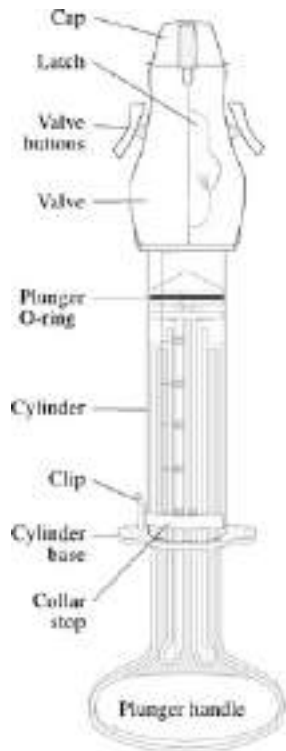
1. Prepare the client.
2. Perform cervical antiseptic prep.
3. Perform paracervical block.
  - 20mL 1% lidocaine
  - “4 site block”
4. Dilate cervix.
5. Insert cannula.



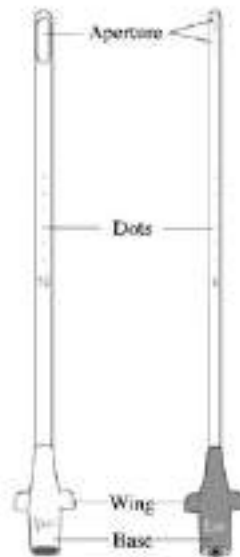
# Steps of the MVA Procedure (cont.)

6. Prepare the MVA & aspirate contents.
  - Attach prepared aspirator to cannula.
  - Release buttons to start suction.
  - Gently rotate cannula 180 degrees in each direction.
  - Use a gentle “in and out” motion.
  - Do not withdraw cannula opening beyond external OS.
7. Inspect tissue.
8. Perform any concurrent procedures.
9. Take immediate post-procedure steps, including instrument processing.

# Ipas MVA Plus



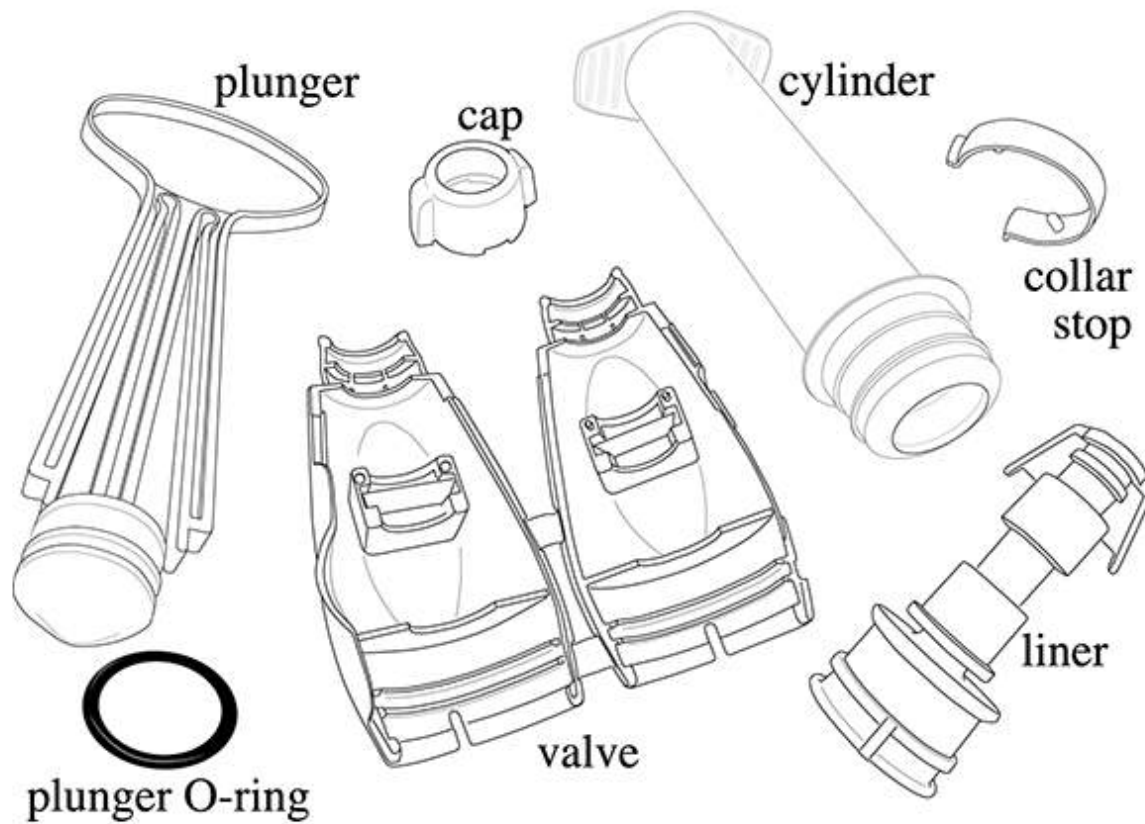
Ipas MVA Plus®



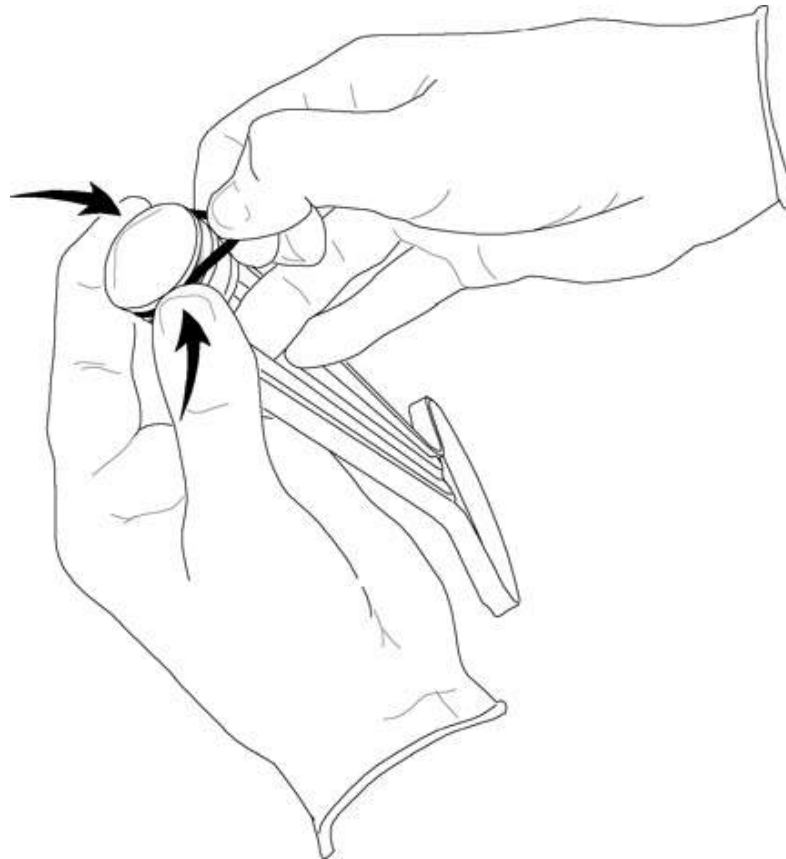
Ipas EasyGrip®  
Cannulae

- Latex-free
- Minimum vacuum of 558.8mmHg
- Vacuum maintained for 30min
- Multiple use
  - Minimum 25 times
- Able to withstand hot or cold processing methods

# MVA Disassembly



# HARDEST STEP! Removing the O-Ring



# MVA Assembly & Creating Vacuum

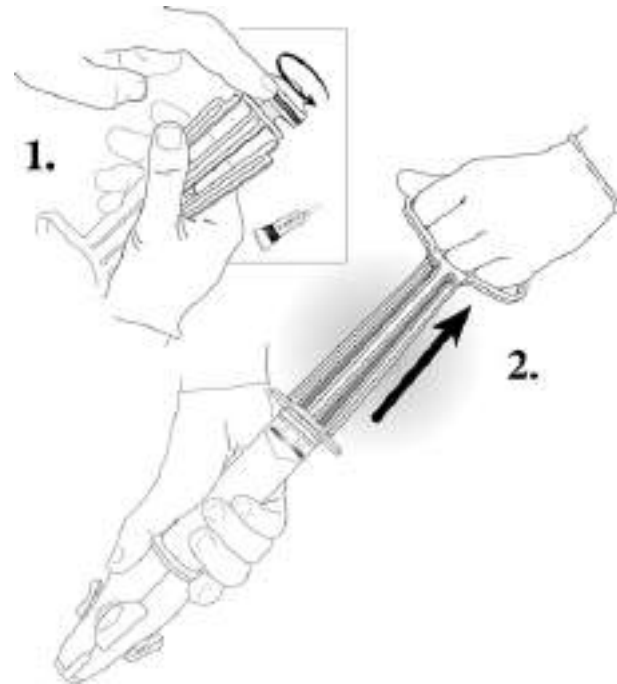
- Show & Tell





# HARDEST STEP! Lubrication

1 drop only



# Cannulae

For pregnancy-related use, depends on uterine size and amount of dilation:

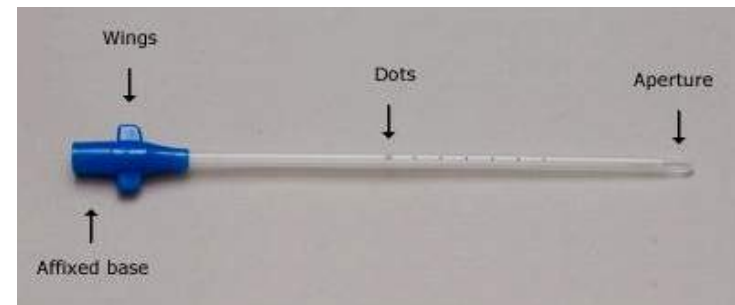
- Uterine size 4–6 weeks LMP: suggest 4–7mm
- Uterine size 7–9 weeks LMP: suggest 6–10mm
- Uterine size 9–12 weeks LMP: suggest 8–12mm

For Endometrial biopsy:

- 3mm size
- Adaptor needed with Ipas MVA plus aspirator
- Latex-free
- *Single use*

# Ipas easygrip cannulae

- Same dimensions, apertures (openings) as Karman cannulae
- Slightly more rigid
- Base affixed to cannula
  - Dots mark the cannula at 1 cm intervals and indicate the location of the main aperture
- Sizes color coded
  - Sizes 4, 5, 6, 7 and 8mm have two opposing apertures
  - Sizes 9, 10 and 12mm have one larger, single-scoop aperture



# 4 main steps for processing

## 1. Pre-soak

1. Makes cleaning easier
2. Chlorine solution assists with disinfection
3. Removes some material

## 2. Cleaning

- WHO says is the most important step to ensure proper final decontamination of instruments

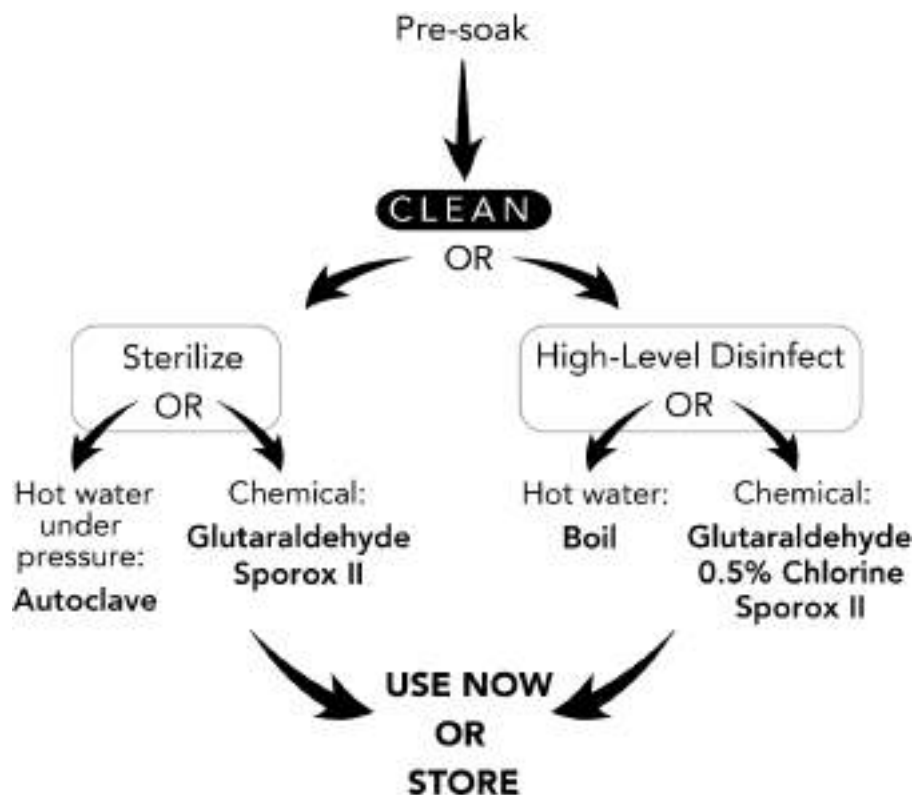
## 3. Sterilization or high-level disinfection

## 4. Storage

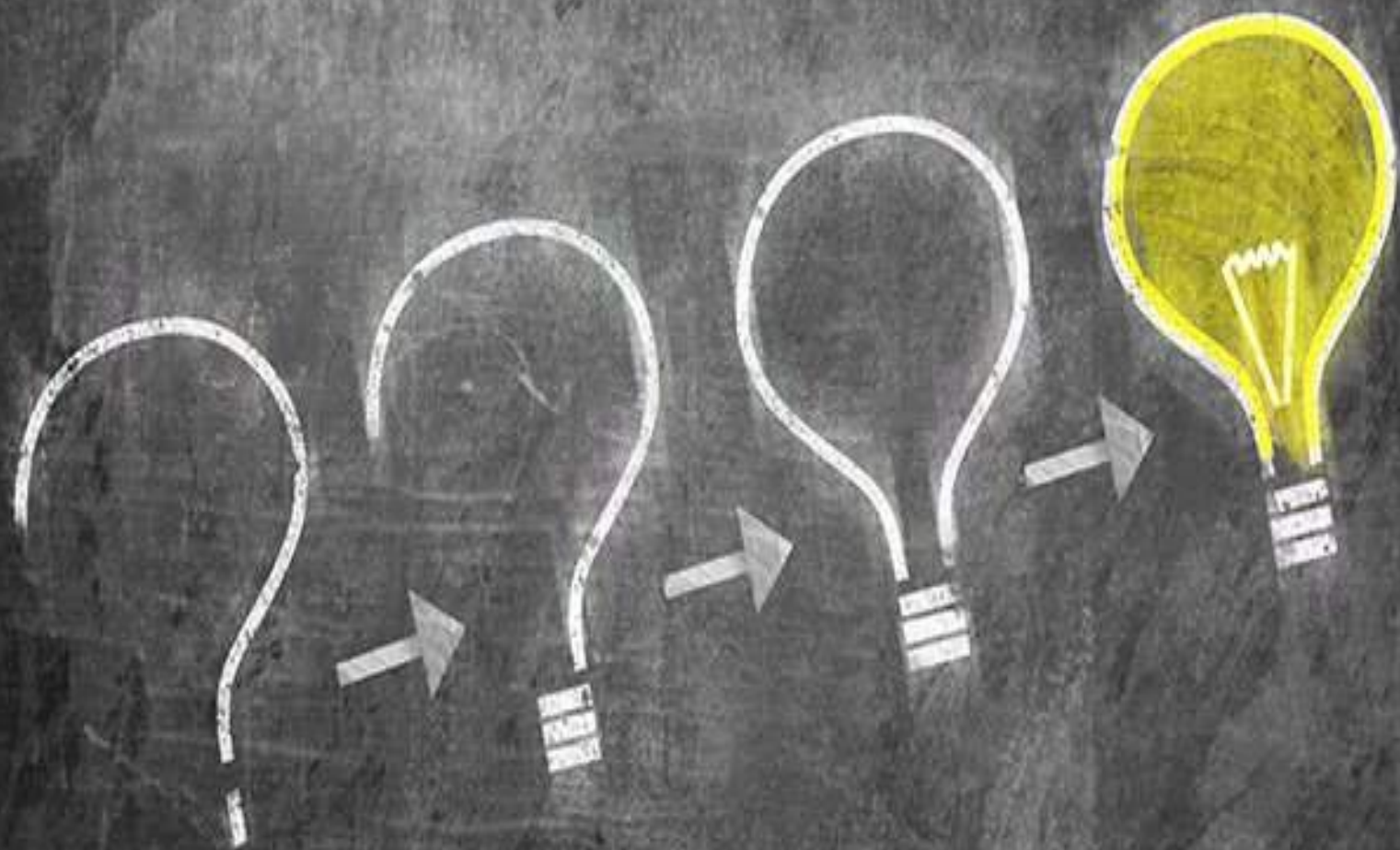
- Cannulae keep sterile or HLD
- Aspirator keep clean



# Common Options for Processing: Ipas MVA Plus and Ipas EasyGrip Cannulae



Ipas Processing video available:  
<https://vimeo.com/254686513>  
PW: IpasPROCvid\_18



# When is it time to discard an MVA?

- Cylinder is cracked or brittle.
- Mineral deposits inhibit plunger movement.
- Valve is cracked, bent or broken.
- Buttons are broken.
- Plunger arms do not lock.
- Aspirator no longer holds a vacuum.

# Why isn't the vacuum working?

- Check that instrument is properly assembled.
- You did not charge the MVA correctly
- Inspect O-ring for proper positioning.
  - If damaged or loose, replace O-ring.
- Too much lubrication.
- Ensure no foreign bodies are present.
- Check cylinder is firmly seated on valve.
- Charge and test again.
  - If vacuum is still not retained, use another aspirator.



## Why did the vacuum decrease or stop working during a procedure?

- Aspirator is full.
- Cannula is withdrawn past the cervical os opening.
- Cannula is clogged.
- Aspirator is incorrectly assembled.

# Make sure you know what you are ordering!



Single valve  
Multi-use device



MVA Double Valve  
Single use



Denniston  
Dilators

How many should you order? Check out the MVA calculator:

<http://www.ipas.org/en/Resources/Ipas%20Publications/Ipas-MVA-Calculator-CD.aspx>



