



Gradian Health Systems™

UAM Introduction Presentation



Agenda



- Welcome
 - Sign-in sheet
- Introductions
- Gradian Health Systems
- UAM Animation
- Overview of the UAM
- UAM Daily User Maintenance Video



Gradian Health Systems



- Equips hospitals around the world to deliver anaesthesia safely and economically.
 - Our mission is to improve access to safe surgery and perioperative care by providing technology, service and training to strengthen anaesthesia capabilities.
- We value communication and strive to be available and provide a response to questions or service issues within 24 hours



Universal Anaesthesia Machine



- Is a state-of-the-art inhalation anaesthesia workstation that:
 - Creates its own oxygen
 - Can operate with or without electricity
 - Transitions seamlessly to room air if no power or compressed oxygen is available.
- It was developed by an anaesthetist working in Malawi.
- The UAM is manufactured in the UK and has a CE mark.





The UAM is installed in 23
Countries in Africa, Asia,
Europe and the Caribbean



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How The UAM Works

Animation Video

<http://www.gradianhealth.org/universal-anaesthesia-machine/>



What is Anaesthesia



- What does an anaesthesia machine do?
- Has anyone ever had to go under anaesthesia?
 - How did you feel? Were you nervous?



What Makes the UAM Different



1. Multiple sources of oxygen
2. Seamless transition between continuous-flow and draw-over (hybrid)
3. Seamless transition between IPPV and spontaneous ventilation (no APL valve)



Four Main Advantages of the UAM



1. Doesn't require oxygen

2. Doesn't require
electricity

3. Simple to use

4. Robust



Integrated Oxygen Concentrator



How the Oxygen Concentrator works:

1. Air filters clean room air
2. Compressor pressurizes room air
3. Zeolite towers remove nitrogen from the air and produce up to 95% oxygen
4. Storage tank for oxygen to maintain up to 10 L/minute



UAM Provides 5 Sources of Oxygen



1. Oxygen Concentrator



2. Pipeline and cylinder



UAM Provides 5 Sources of Oxygen



5. Room air inlet
= 21% oxygen



4. Inlet for O₂ from
external flow meter



Creative Patient Vital Signs Monitor



- Temp 1 probe connector
- Temp 2 probe connector
- ECG/ RESP cable connector
- SpO2 probe connector
- NIPB hose connector
- Battery compartment

- Has a re-chargeable internal battery that lasts for 4-6 hours.
- The Monitor is securely attached to the UAM's top shelf
 - Removing it for use without the UAM will void its warranty
- Consumables are not replaced by Gadian
- Monitor provided by, but not made by Gadian

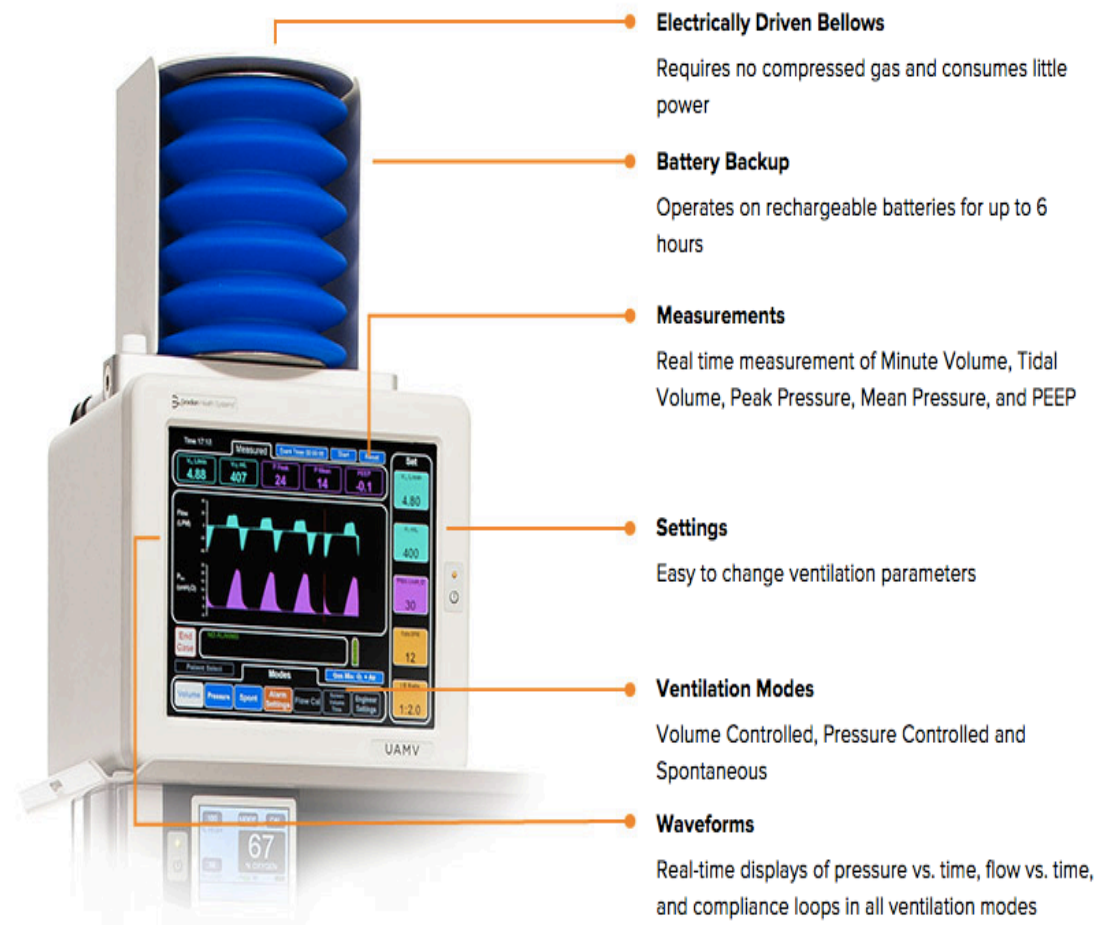


UAM Ventilator (optional)



The Ventilator Components

- Battery lasts for up to 6 hours
- Electrically driven bellows that don't require compressed gas and consumes little power
- Real-time displays of pressure vs. time, flow vs. time





UAM Daily User Maintenance Video

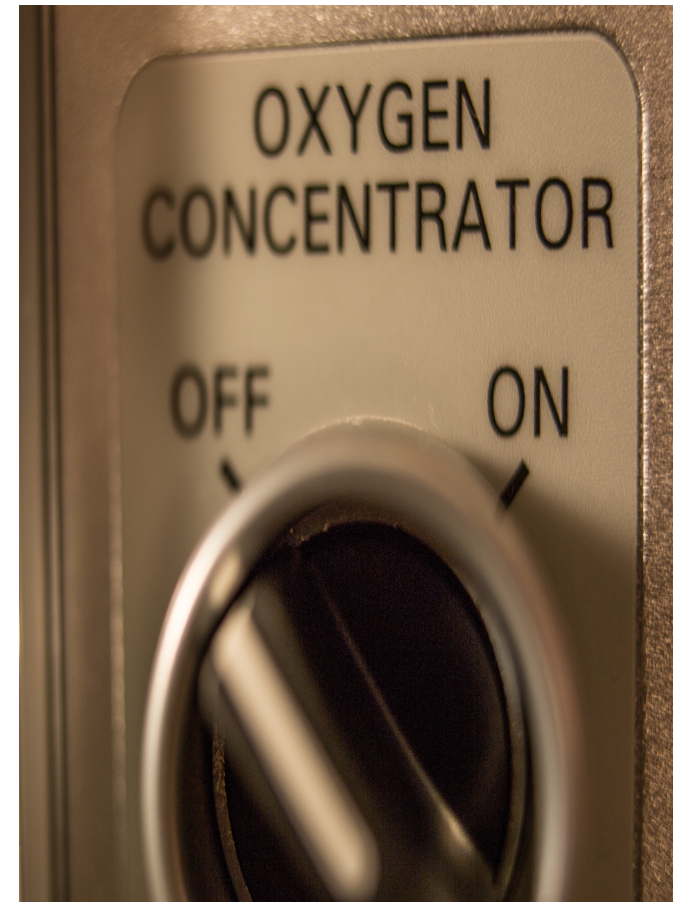
<http://www.gradianhealth.org/resources/>



Tips to Preserve the Life of the UAM



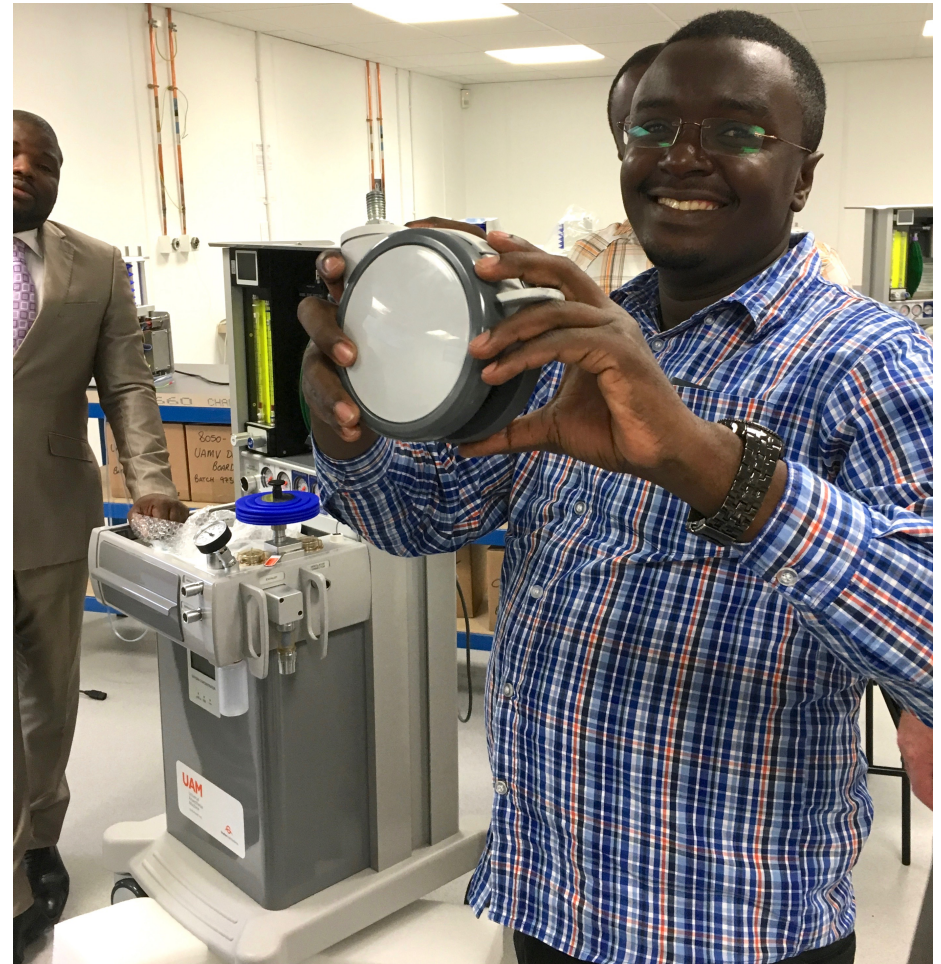
- We highly recommend a **voltage stabilizer** between the UAM and the electrical outlet to guard against spikes and brownouts.
 - If you don't use a voltage stabilizer the UAM will shut off to protect itself against power outage as well as fluctuation in the electricity.
- Leave the UAM on (green main isolator switch on the back) to trickle charge the patient monitor, oxygen monitor, and ventilator.
- Every 3 months perform full function tests and preventive maintenance procedures as described in the UAM maintenance manual on page 43.



Service and Preventive Maintenance



- All UAMs come with at least a 2-year warranty that includes:
 - Every 6 months one of our technicians will conduct an in-depth preventative maintenance check.
 - Provide any spare parts needed
 - Consumables not included
- Gradian Service team is always available to assist you!



Resources



Universal Anaesthesia Machine PRE-OPERATIVE CHECKLIST

I. Perform at the START of every OPERATING session

INSPECT & TEST

1. Check stability: casters OK, brakes function
2. Connect and check available gas sources: correct pressure, no leaks, tug test on pipelines
3. Check bellows OK: move up and down and observe balloon moves freely
4. Check breathing system: use bellows to inflate 2-litre bag or dummy lung. Check action of balloon while bag inflates/deflates. (If no dummy lung is available, proceed to 5)
5. Check resistance by pushing bellows with patient Y piece blocked (maximum pressure should be 55 cms water)
6. Check the water trap and empty if necessary
7. Check the gas scavenging is configured correctly, if available

VAPORISER

1. Check the volatile agent level in the vaporiser and fill as necessary
2. Check the operation of the vaporiser selector wheel (press silver button to unlock)

POWER

1. Switch on green mains isolator switch on the UAM back (there will be a delay while the system inspects the quality of the electrical power)
2. Press and hold 'On/Off' button next to the oxygen monitor screen until it lights up

OXYGEN MONITOR

1. Using 100% cylinder/pipeline oxygen, set oxygen flow meter to 6 L/minute and wait for maximum reading on monitor
2. Press 'CAL', then 'O2', then 'GO'. When the calibration is finished, press 'EXIT' two times.
3. Turn off the oxygen. Draw room air through the system with the bellows until the reading reaches its lowest setting
4. Press 'CAL', then 'AIR', then 'GO'. When the calibration is finished, press 'EXIT' two times.

OXYGEN SUPPLY

1. Turn on the oxygen concentrator by using the switch on the front of the machine
2. Set oxygen flow to 8 L/minute, wait 1-3 minutes. Oxygen % should be greater than 90%

NITROUS OXIDE

1. Set oxygen flow to 6 litres per minute
2. Set Nitrous Oxide flow to 4 litres per minute
3. Gradually turn down the oxygen flow to reduce FiO₂ to 25% and lower-- nitrous oxide flow should cut off when oxygen concentration is <25%

OVER →

For service issues, please contact **Gradian Health Systems** at service@gradianhealth.org



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A full list of resources is available at: <http://www.gradianhealth.org/resources/>



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For comments or questions about service or training
please contact us at:

service@gradianhealth.org

Or

WhatsApp: +1-929-280-0210

