

CRICOTHYROIDOTOMY TRAINER REVIEW



The DAS 2015 guidelines for the management of unanticipated difficult intubation in adults advocate scalpel cricothyroidotomy for emergency front-of-neck access in the anaesthetised and paralysed patient where intubation and oxygenation has failed (Plan D).

Every anaesthetist should be trained to perform the Plan D technique. This document provides a summary of the features and fidelity of simulator trainers currently available to help provide this training.

We advocate Plan D part task training in two phases: Initial technical and motor skill development with low fidelity simulators, followed by simulation to advance non-technical and psychological skills in a stressful situation. This can be achieved using commercially available simulation apps (e.g., SimMon) in conjunction with the trainers below.

HIGH-FIDELITY EXTREME AIRWAY TRAINER



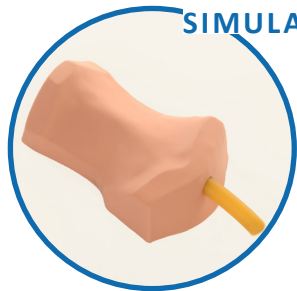
Cost	£	<i>Incorporates home-made element manufacture and assembly.</i>
Set-up	●	
Fidelity	+	<i>Excellent haptic feedback from the ADAMgel, allows cut-down technique. Only ultrasound-compatible model in this list.</i>
CTM Palpable	✓	
Vertical Incision	✓	
Ultrasound	✓	
Latex	X	

VARADAY ET AL HOMEMADE CRICOTHYROTOMY MODEL



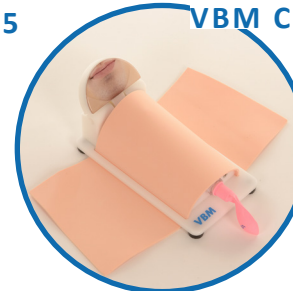
Cost	£	<i>Requires assembly, from readily available equipment.</i>
Set-up	●	
Fidelity	-	<i>Would make ideal model for acquiring initial motor skills for Plan D technique before moving onto higher fidelity models.</i>
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	X	

SIMULAIDS CRICOTHYROTOMY TRAINER DELUXE No. 135



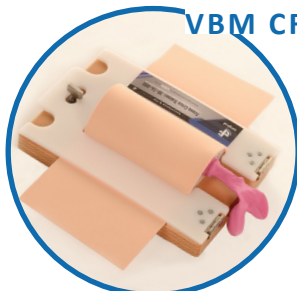
Cost	£ £	<i>Internal tube simulates CTM but when present has tendency to redirect bougie into false passage. Very prominent cricothyroid gap. Lubrication required.</i>
Set-up	●	
Fidelity	-	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	

VBM CRICO-TRAINER ADELAIDE



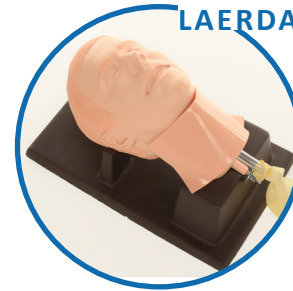
Cost	£ £	<i>Very prominent thyroid cartilage with prominent cricothyroid gap. Low-cost foam skin inserts.</i>
Set-up	●	
Fidelity	-	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	

VBM CRICO-TRAINER FROVA



Cost	£ £	<i>Improved laryngeal cartilage design, low-cost foam skin inserts with very easy set-up.</i>
Set-up	●	
Fidelity	-	
CTM Palpable	X	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	

LAERDAL CRICOID STICK SIMULATOR

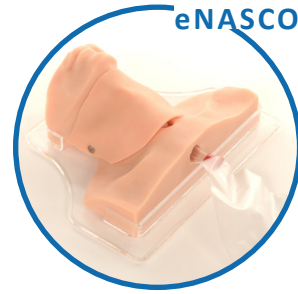


Cost	£ £ £	<i>Unable to perform Plan D technique on this model with its current design.</i>
Set-up	●	
Fidelity	-	
CTM Palpable	X	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	



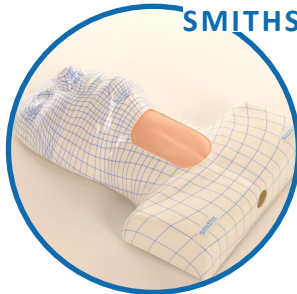
PHARMABOTICS CRICOTRACHEOTOMY TRAINER

Cost	£££	<i>Convincing differentiation of 'cartilaginous' structures and CTM. Lubrication required (not supplied).</i>
Set-up	●	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	○TBC	



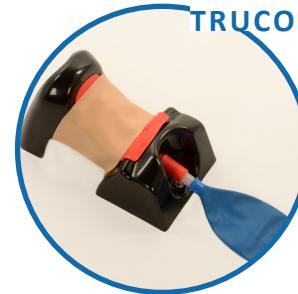
eNASCO LIFE/FORM CRICOTHYROTOMY SIMULATOR

Cost	££££	<i>Only the 'Open' style laryngeal insert permits Plan D technique. Internal clear tube simulates CTM, but when present has tendency to redirect bougie into false passage. Lubrication required (supplied).</i>
Set-up	●	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	X	



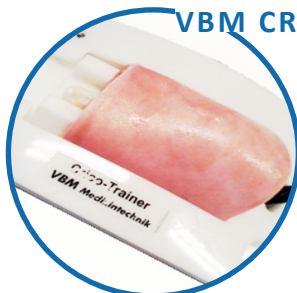
SMITHS MEDICAL TRACHEOSTOMY HEAD

Cost	££££	<i>Rigid thyroid cartilage. Lubrication required (not supplied).</i>
Set-up	●	
Fidelity	+	
CTM Palpable	X	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	



TRUCORP AIRSIM TRUCRIC

Cost	££££	<i>Lower fidelity than alternative TruCorp product. Laryngeal inserts provide realistic CTM haptic feedback.</i>
Set-up	●	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	



VBM CRICO-TRAINER PIG

Cost	££££	<i>Requires separate supply of porcine larynx, with ensuing refrigerated storage and hygiene issues.</i>
Set-up	●	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	



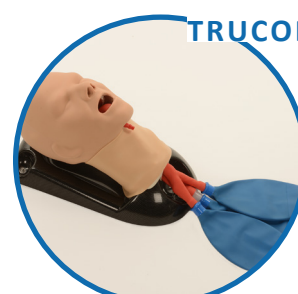
LAERDAL DELUXE DIFFICULT AIRWAY TRAINER

Cost	£££££	<i>Optional CTM tape available to simulate fibrous membrane for puncture. Allows combined airway management and Plan D simulation..</i>
Set-up	○TBC	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	



SYNDAVER ADULT CRIC TRAINER

Cost	£££££	<i>Not tested directly; requires shipping direct from supplier in United States. 'Low-cost Adult Cric Trainer' no longer available from this manufacturer.</i>
Set-up	○TBC	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	✓	
Ultrasound	X	
Latex	X	



TRUCORP AIRSIM ADVANCE COMBO

Cost	£££££	<i>Floating larynx provides additional realism. Allows combined advanced airway management and Plan D simulation. Lubrication required (supplied).</i>
Set-up	●	
Fidelity	+	
CTM Palpable	✓	
Vertical Incision	X	
Ultrasound	X	
Latex	✓	

KEY

Cost: £ £0 - £249 ££ £250 - £499 £££ £500 - £749 ££££ £750 - £999 £££££ > £1000

Set-up: ● INVOLVED ● STRAIGHTFORWARD ● VERY EASY

Fidelity: - LOW: skin, thyroid cartilage, cricoid cartilage, hollow trachea

+ HIGH: as above incorporating: skin texture, subcutaneous layers, fibrous CTM, tracheal rings, mandible, face, tracheal path

CTM Palpable / Vertical Incision / Ultrasound / Latex: ✓ YES X NO

