



Surgical Chloe™ S2100

Full Body Surgical Simulator

- Address surgical competencies
- Perform laparotomy, laparoscopy or vaginal procedures
- Scenarios created and tested in an academic OB/GYN environment
- Use real surgical instruments

Address ACGME Skills

Simulator can be used to address competencies in six areas including: patient care, medical knowledge, practice based knowledge and improvement, systems based practice, communication, and professionalism.

Surgical Scenarios

- Ruptured ectopic
- Pelvic mass
- Septic abortion
- Bleeding disorder
- Post-op hemorrhage
- Patient safety (fire)
- Malignant hyperthermia
- Cardiac arrest
- Anaphylaxis
- Hypoxia

Record Everything

Two onboard cameras and a head-mounted camera focus on the surgical technique and intervention methods, while an overhead camera records the actions of the surgical team.

Use Real Surgical Instruments


With its lifelike abdominal inserts and uterine assemblies, procedures can be performed using real surgical instruments in a real Surgical OR.



Surgical Chloe™ S2100 | Full Body Surgical Simulator

A surgical simulator showing a ruptured ectopic pregnancy. The scene is set on a blue surgical drape. A large, bloody, yellowish mass is visible, surrounded by various surgical instruments like forceps and retractors. A hand in a blue glove is seen manipulating the tissue.

Ruptured Ectopic Pregnancy

A close-up view of a surgical simulator showing the removal of an endometrioma. The procedure is being performed on a pinkish, fleshy tissue. A hand in a blue glove is using surgical instruments to carefully dissect and remove the lesion.

Removal of Endometrioma

A surgical simulator showing the initial incision and dissection phase. A hand in a blue glove is using a scalpel to make a precise incision in the skin. The underlying tissue is being carefully dissected with surgical instruments.

Incision and Dissection

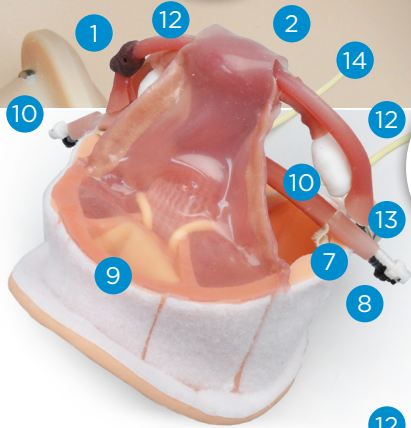
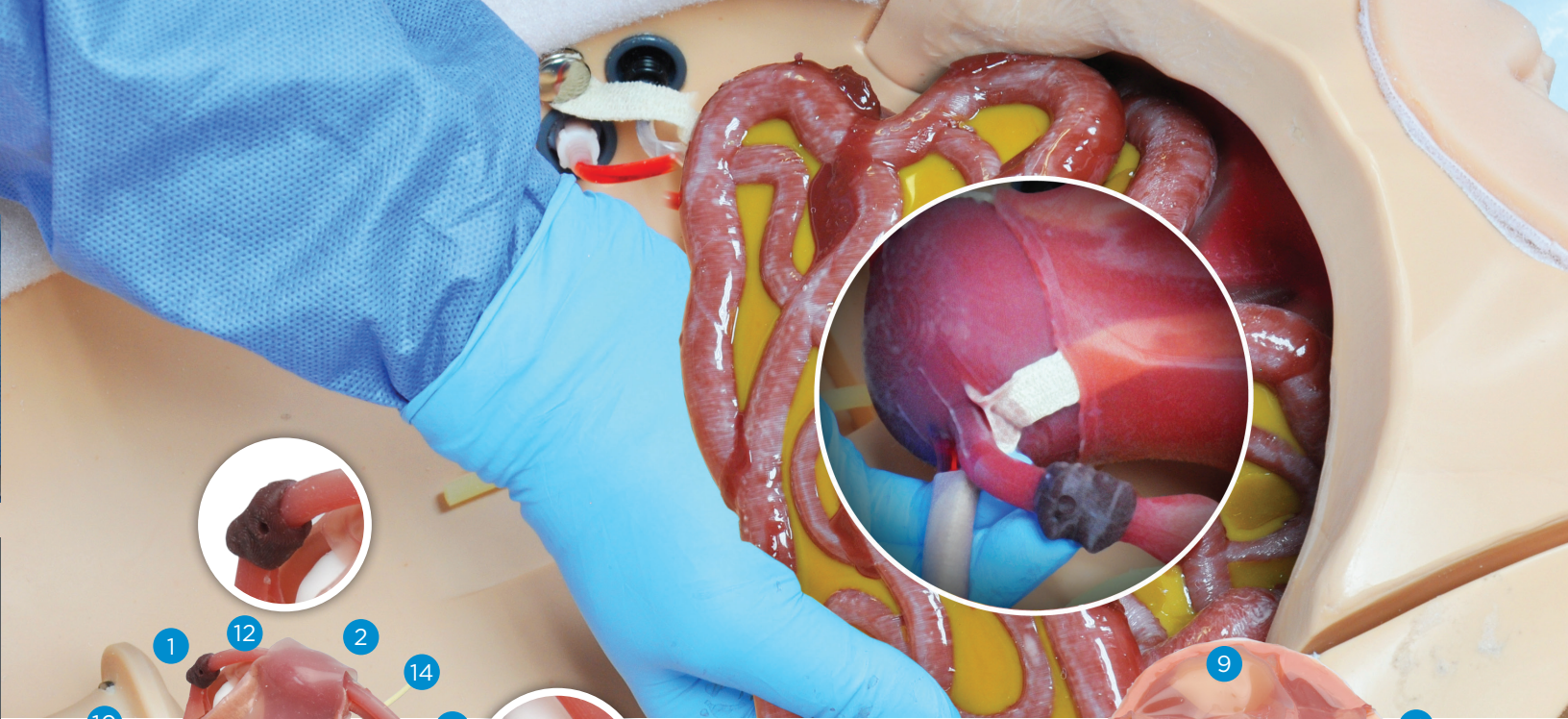
A surgical simulator showing the removal of a dermoid cyst. The procedure is being performed on a pinkish, fleshy tissue. A hand in a blue glove is using surgical instruments to carefully dissect and remove the cyst.

Removal of Dermoid Cyst

A surgical simulator showing a hysterectomy procedure. The scene is set on a blue surgical drape. A large, pinkish, fleshy mass is visible, surrounded by various surgical instruments like forceps and retractors. A hand in a blue glove is seen manipulating the tissue.

Hysterectomy

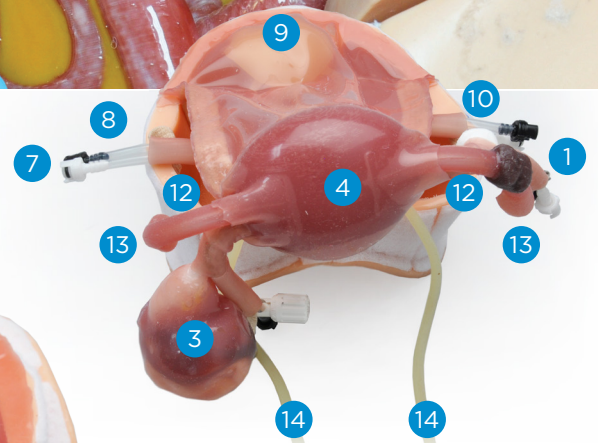
See more on full features list...



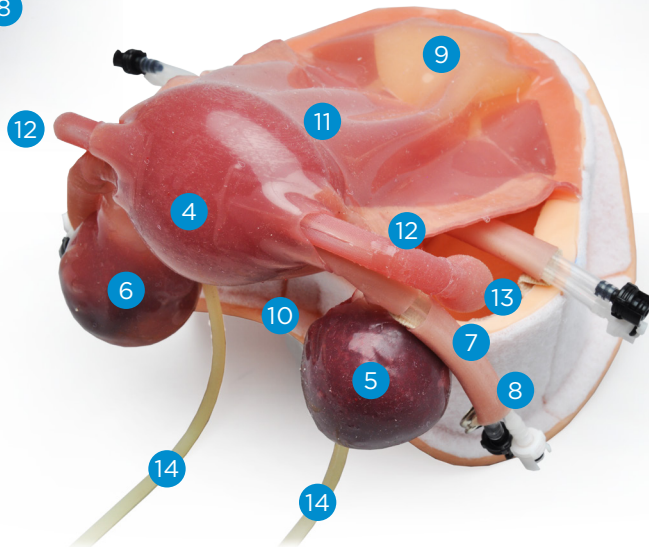
Normal Uterus with Ectopic Pregnancy



Enlarged Uterus with Dermoid Cyst and Ectopic Pregnancy



Enlarged Fibroid Uterus with Endometrioma and Simple Cyst



Uterine Assemblies

1 Ectopic Pregnancy

2 Normal Uterus

3 Dermoid Cyst

4 Enlarged Uterus

5 Endometrioma

6 Simple Cyst

7 Veins

8 Arteries

9 Bladder

10 Ovaries

11 Embedded Fibroids

12 Fallopian Tube

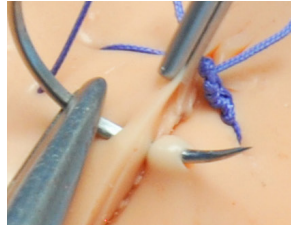
13 Fimbriae

14 Ureters



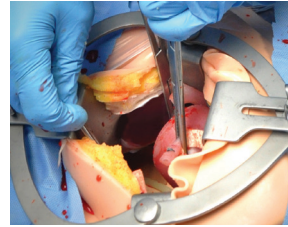
Assess Individual and Team Competencies

Team-building scenarios can be performed for the development of Gynecologic Surgical Skills and Patient Safety.



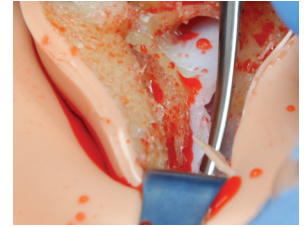
Cut and Suture Like Real Tissue

Multi-layer design representing the skin, subcutaneous, fascia, muscle, and peritoneum for maximum realism.



Practice Laparotomy, Laparoscopy and Vaginal Procedures

Chloe allows caregivers to perform surgical interventions using all three procedures.



Bleeds When Cut

Abdominal inserts and uterine assemblies incorporate simulated blood to allow realistic practice of hemostatic technique.



Bowel Insert

For abdominal and laparoscopic procedures, the simulated bowel can be moved aside to provide access to the underlying uterine assembly.



Record Everything

Seamless integration with Gaumard's intuitive software allows recording of the events log and control of the simulation from a single PC.



Replaceable Uterine Assemblies

Each assembly exhibits different complications and allows surgical teams to carry out a variety of procedures.

Von Willebrand's Disease		
Initial State		
Von Willebrand 1	00:00	Tachy
Von Willebrand 2	06:30	Tachy
Von Willebrand 3	06:30	Tachy
Von Willebrand 4	06:30	Tachy

CPR + Circulation

Detection and log of chest compression and ventilations, bilateral carotid, radial, and brachial pulses; heart sounds, and program-mable blood pressure.



Laptop and Vital Signs Monitor

Surgical Chloe includes one laptop PC with the UNI® control software and a 20in touchscreen Vital Signs Monitor.



Train for Everything From Assessment to Recovery Room

Scenarios can cover an entire procedure, from patient presentation, to assessment, surgical management, and the recovery room.



Speech and Streaming Voice

Be the voice of Chloe™ and hear caregiver responses. Create and store vocal responses or select from a pre-recorded vocal menu.

Von Willebrand's	
1	Initial State
	Von Willebrand 1
	Von Willebrand 2
	Von Willebrand 3
	Von Willebrand 4

Surgical and General Patient Safety Scenarios

Train and assess surgeons or teams in complications such as hemorrhage, malignant hyperthermia and patient safety.

Surgical Chloe™ S2100 | Full Body Surgical Simulator

Two pelvic cameras and surgeon's head-mounted camera focus on technique, interventions and teamwork, while an overhead camera records actions of the entire team.

Audio, video and more...

Up to 8 video and audio streams can be recorded along with 4 patient monitor feeds and a simulator log file.

Simulation Made Easy™

Debriefing using the Pro+ is simpler than ever with advanced search functionality, simultaneous multicomputer access and instant playback.

Integrated

Monitor shows "patient" status, views of up to four cameras, operating system, and log of events.

Flexible

It's compatibility with various wireless and wired cameras TOGETHER with the ability to shoot multiple simulations simultaneously make the Pro+ the best option for simulations of all types and sizes.



Two high resolution infrared cameras in pelvic cavity

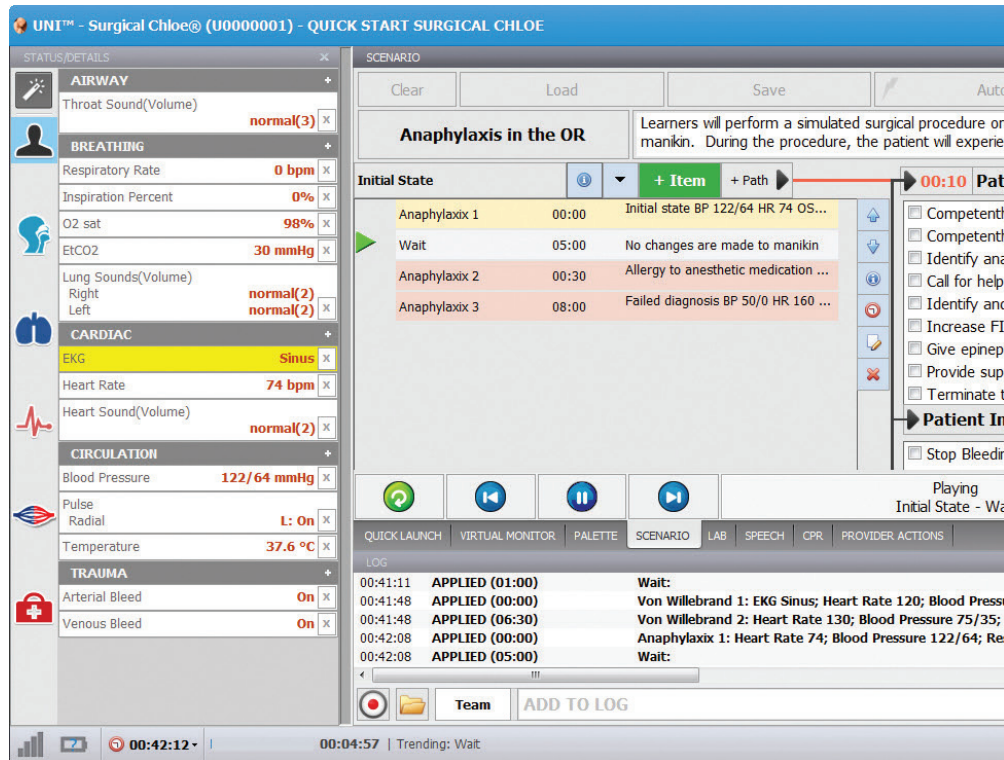
One overhead camera

One headmounted camera

Surgical Chloe™ S2100 | Full Body Surgical Simulator

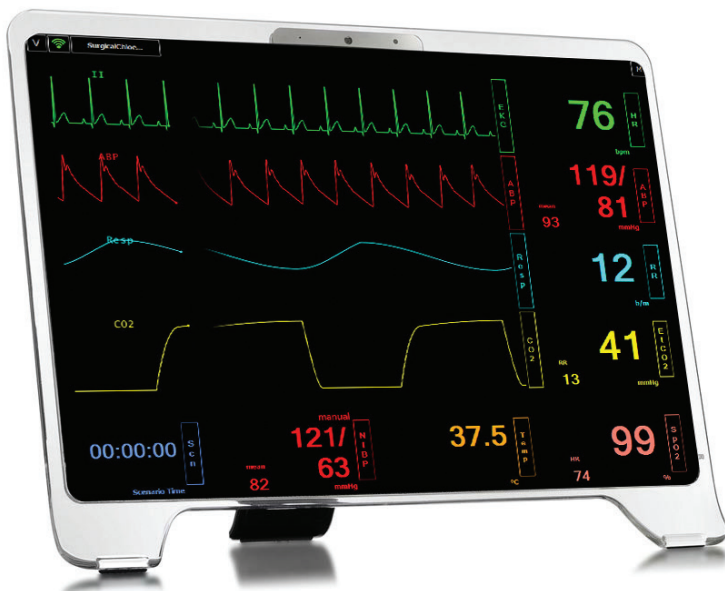
UNI® Software

- Sensors track participants actions
- Changes in condition and care provided are time stamped and logged
- View the actions of up to 6 care providers using a responsive menu or write narrative
- Generate and share lab results
- Links with recording and debriefing system integrating the event log with cameras and patient monitor
- Automatically changes vital signs in response to blood loss
- 11 preprogrammed scenarios which can be modified by the instructor even during the scenario
- Create your own scenarios - add/edit
- Change simulator's condition during the scenario on-the-fly



Vital Signs Monitor

- Controlled via laptop
- Simulated vital signs
- Use selected configuration or create your own configuration to mimic the real monitors used in your facility
- Customize alarms
- Easy to operate and control
- Reflect simulator's condition during the scenario
- Share images such as ultrasounds, CT scans, lab results
- Touchscreen control
- Monitor can be configured by the instructor to suit the scenario
- Display up to 8 numeric parameters
- Select up to 5 dynamic waveforms



Surgical Chloe™ S2100 | Full Body Surgical Simulator

General

- Powered from an internal rechargeable battery or wall outlet
- Simulator receives commands from a wired Laptop (15 foot Ethernet cable included)
- Use preprogrammed scenarios, modify them or create your own quickly and easily
- Remains fully functional even while in transit
- Workbook of ten (10) advanced scenarios and example surgical checklists
- Training Video

Surgical Components

- **Uterine Assembly 1:** Normal Uterus with ectopic pregnancy and uterine bleeding. Simulates ruptured Ectopic pregnancy with bleeding, severe vaginal bleeding from uterus, and includes bladder
- **Uterine Assembly 2:** Enlarged Uterus with dermoid cyst on one side and ectopic pregnancy on the other. Simulates ruptured ectopic pregnancy with bleeding; also includes realistic dermoid and bladder
- **Uterine Assembly 3:** Enlarged uterus with embedded fibroids, endometrioma on one side, and simple cyst on the other. Simulates embedded bleeding fibroids; also includes realistic simple cyst, endometrioma, and bladder
- **Abdominal wall insert**
 - Use your instruments for incision, dissection, and suturing
 - Can be used at least 4 times
 - Multi-layer design replicates the skin, subcutaneous, fascia, muscle, and peritoneum
 - Incorporates bleeding
 - Can be used to perform either pfannenstiel or vertical incision
 - Can be used to place laparoscopic trocars
- **Laparoscopy Abdominal Wall**
 - Includes 8 access ports on left, right, and midline of abdominal wall
- **Bowel Overlay**
 - Includes insert that can be placed over uterine assembly for added realism

Scenarios by Martin E. Olsen, MD

- Ruptured ectopic pregnancy
- Pelvic mass in pregnancy
- Septic abortion
- Bleeding disorder - Von Willebrand's disease
- Post-operative hemorrhage after conization of the cervix
- Fire in the OR
- Malignant hyperthermia during surgery
- Cardiac arrest in the OR
- Anaphylaxis and Hypoxia in the OR

Airway

- Multiple upper airway sounds synchronized with breathing
- Bag-Valve-Mask Ventilation
- Placement of conventional airway adjuncts

Breathing

- Control rate and depth of respiration
- Chest rise and lung sounds are synchronized with selectable breathing patterns
- Simulated spontaneous breathing
- Normal and abnormal breath sounds

Cardiac

- Conductive skin regions allow for ECG monitoring with real equipment
- Heart sounds may be auscultated and are synchronized with ECG

Circulation

- Measure blood pressure by palpation or auscultation
- Use real BP cuff rather than a "virtual" cuff to measure blood pressure
- Korotkoff sounds audible between systolic and diastolic pressures
- Oxygen saturation detected using real monitors rather than a "virtual" value
- Pulse sites synchronized with BP and heart rate
- Bilateral IV arms with fill/drain sites
- SubQ and IM injection sites
- ECG monitoring using real devices
- Multiple heart sounds, rates and intensities
- Virtual ECG rhythms are generated in real time
- Ovarian and Uterine arteries and veins, with bleeding functionality
- During application of scenarios, vital signs reflect physiologic changes that occur with hemorrhage

Neural Responses

- Eyes open and close

Speech

- Wireless streaming audio and pre-recorded responses
- Create and store vocal responses in any language

20in All-in-one Touch Screen PC to Display Vital Signs

- Controlled via laptop
- Use selected configuration or create your own configuration to mimic the real monitors used in your facility
- Share images such as ultrasounds, CT scans, lab results
- Touchscreen control

Pro+ Recording and Debriefing System

- Two (2) built in infrared cameras in lower torso
- One (1) head mounted camera
- One (1) overhead camera records actions of surgical team

User Interface

- Sensors track participants actions
- Changes in condition and care provided are time stamped and logged
- Create your own scenarios - add/edit
- Change simulator's condition during the scenario

Includes

- One laptop to run Pro+ system and UNI™ Software
- Pro+ Recording and debriefing system
- Vital Signs Monitor
- Four (4) abdominal wall inserts
- Twelve (12) uterine assemblies, four (4) of each type
- CDROM demonstration video
- Soft sided case with rollers
- User Guide

Surgical Chloe™ S2100

Patented; other patents pending

Surgical Chloe™ without PRO+ Recording and Debriefing System S2101

Replaceable Modules Abdominal Wall Inserts S2100.013

Uterine Assembly 1 S2100.014

Uterine Assembly 2 S2100.015

Uterine Assembly 3 S2100.016

Bowel Overlay S2100.017

Laparoscopy Wall S2100.018