Curriculum 2024 Guide for Special Interest Training Module (SITM): Robotic Assisted Gynaecological Surgery (RAGS)

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Contents

1. The Robotic Assisted Gynaecological Surgery SITM

This SITM is aimed at learners with an interest in robotic assisted gynaecological surgery. This SITM provides training in the skills required for using the robotic tool, and also includes core knowledge areas. The key skills covered in this SITM are supported with descriptive requirements of a subset of competences in surgical procedures. Learners will learn how to competently assess and take consent from patients for robotic assisted procedures. After completing this SITM, learners will have core surgical robotic skills which can be later developed and built-on enabling them to provide a comprehensive gynaecological surgery service, involving other surgical disciplines as appropriate.

This is a 'Contingent' SITM and is paired with the Gynaecological Surgical Care SITM. This means that if a learner is interested in specialising in robotic assisted gynaecological surgery, they must have started the Gynaecological Surgical Care SITM, and demonstrated appropriate levels of surgical aptitude, before they can register for this SITM.

As a learner progresses through the SITM, they will learn how to handle a variety of scenarios. Learners will also participate in educational events to further develop their training. Throughout training, learners will need to reflect on whether a project has gone well, learn from positive and negative experiences, and use this to improve their own skills.

Educational Supervisors will closely observe and assess learners for progression. The BIARGS Robotic Surgical log book is a simple way to record stepwise progression in performing robotic procedures. Robotic specific assessment tools (GEARS: Global Evaluative Assessment of Robotic Skills) and surgical videos can be used to assess specific robotic skills such as handling of tissues and appropriate use of robotic instruments.

Before signing off on this SITM, the Educational Supervisor will decide the level of supervision required for each Robotic Assisted Gynaecological Surgery (RAGS) Capability in Practice (CiP), and whether this has been met. More detail is provided in Section 5 of the Special Interest Training Definitive Document.

2. Design of the SITM

The Robotic Assisted Gynaecological Surgery 2024 SITM is made up of three RAGS CiPs.

If undertaking the module full time, it is expected to take 18–24 months of training. However, this timeframe is indicative as training is entirely competency based.

The RAGS SITM is the contingent SITM for the Gynaecological Surgical Care SITM. The Gynaecological Surgical Care SITM must have been commenced, and demonstrated appropriate levels of surgical aptitude, before undertaking the RAGS SITM.

Learners must complete a minimum of two SITMs to obtain a certificate of completion of training (CCT). They can undertake any obstetrics or gynaecology SITM as their second SITM, depending on whether they are aspiring to a combined obstetrics and gynaecology or gynaecology-only special interest post.

Here is the GMC-approved RAGS SITM:

3. Capabilities in Practice (CiPs)

RAGS CiP 1: The doctor can be an effective assistant within the multidisciplinary robotic surgical team.	
Key skills	**Descriptors**
Is familiar with robotic components, instruments, mechanics, ergonomics and fundamental techniques involved in RAGS	• Understands how to set up the operating room for RAGS. • Can correctly position the patient for robotic surgery. • Undertakes vaginal preparation for a robotic procedure. • Aware of principles of the robotic system and the fundamentals of the component of instruments used by the technology. • Is able to drape the robot. • Is able to respond to system errors. • Able to drive the robot. • Can maintain a clear image by cleaning/changing the camera. • Is able to insert, change and remove robotic instruments. • Is able to place the port to perform the robotic procedure. • Understands different docking positions and able to dock the robot in different positions. • Can troubleshoot and re-dock the robotic system. • Can use suction and maintain a clear operative field to carry out surgery. • Is able to introduce and present a loaded needle. • Understands and can use different methods to maintain pneumoperitoneum. • Can safely retrieve needle, swabs and specimen.

Safely uses energy sources as part of robotic surgery	- Uses correct energy type and setting for each procedure. - Takes steps to prevent diathermy related complications. - Is aware of mechanism of how to use different energy sources when performing RAGS.
Works effectively as part of the multidisciplinary team (MDT)	- Appreciates the impact of human factors on how the team functions and the safety of the surgery. - Provides leadership within the MDT when carrying out robotic surgery. - Communicates clearly with the theatre and anaesthetic team. - Understands specimen handling and histology and cytology requests. - Communicates with recovery and ward staff to determine the post-operative treatment plan. - Instructs nursing staff on postoperative care and pain management. - Makes sure someone's thromboprophylaxis type, dose and duration is communicated to postoperative teams and the patient.

Evidence to inform decision – examples of evidence (not mandatory requirements)

- Reflective practice
- TO2
- Direct observation by senior colleagues
- Attendance at local, deanery and national teaching
- Completed online training module for robotic system
- Attendance at local, regional or national robotic courses

- Confirmed participation in MDT meetings and clinics
- Leads critical incident review
- CbD
- Mini-CEX
- TO2 (including SO)

Mandatory requirements

- OSATS:
  - docking and undocking of robot
  - robotic assisted hysterectomy

Knowledge criteria

- Understands the fundamentals of the robotic system components and instrumentation
- Understands how energy sources are used in robotic surgery and the potential complications if they are used inappropriately
- Understands the importance of communicating with the scrub team about needle/swab count
- Relevant anatomy and how robotic systems could interfere with them
- Understands indications for robotic surgery including:

> - o informed consent
> - o effects of pneumoperitoneum
> - Is able to understand why the robot arm clashes and adjust its position
> - Understands the appropriate use of an assistant port to insert instruments
> - Understands neurological conditions that could be due to the patient being poorly positioned during a prolonged procedure
> - Objective methods for assessing port placement and pneumoperitoneum

RAGS CiP 2: The doctor uses robotic assistance to provide high-quality surgery for pelvic pathology.	
Key skills	**Descriptors**
Demonstrates safe surgical practice	• Selects people appropriately for robotic surgery with emphasis on complex patients, high body mass index and those with deep pelvic pathology, where robotic assistance will enhance someone's surgery and recovery. • Can overcome lack of haptic feedback with robotic surgery. • Can carry out microdissection and atraumatic tissue handling with the robotic system. • Maintains the safety of the operative field where the surgery is performed. • Can perform ovarian or uterine artery ligation. • Can independently perform laparoscopic/robotic adhesiolysis. • Can independently perform a robotic hysterectomy. • Has appropriate suture handling and knot tying skills for robotic surgery.
Evidence to inform decision – examples of evidence (not mandatory requirements)	
• Reflective practice • NOTSS • Attendance at risk management meetings • Attendance at skills drill events • Completion of online system training • Completion of 30 hours of simulation console training (indicative) • Attendance at robotic course(s)	• NOTSS • CbD • Feedback from trainer • TO2 • Mini-CEX
Mandatory requirements	
• OSATS: o docking and undocking of robot	

o   robotic assisted hysterectomy

Knowledge criteria

- The necessary robotic equipment and how to set up the theatre
- Potential surgical complications
- How to manage major haemorrhage
- The indications and complications of robotic procedures:
    - robotic port placement
    - surgical anatomy of pelvis
- Alternative treatment options for patients with pelvic disorders, the indications that they are necessary , complications of other treatment options and getting informed consent
- Understands the fundamentals of the robotic system components and instrumentation
- Understands how energy sources are used in robotic surgery and their potential complications if used inappropriately
- Understands the importance of communicating with the scrub team and checking the needle/swab count.
- Can prevent excessive blood loss during the surgical procedure
- Is able to undertake robotic assisted suturing
- Surgical management of complications and making an appropriate referral
- Can involve another specialist and ask for help, as required.
- Is able to perform an emergency undocking procedure
- Is able to change to laparoscopy or laparotomy, as appropriate
- Demonstrate understanding of specimen handling and histology/cytology requests
- Effective communication with recovery and ward staff

RAGS CiP 3: The doctor can recognise, assess and manage complications and emergencies in robotic theatre.

Key skills	Descriptors
Recognises, minimises, and manages harm from complications of RAGS	- Recognises surgical complications, such as bowel, urinary and vascular injuries, and involves appropriate specialists, where needed. - Recognises potential risks during surgery and makes appropriate decisions to prevent harm to the patient. - Recognises the role of other specialists in managing surgical complications. - Recognises the potential effect of prolonged pneumoperitoneum. - Understands the indications for moving to laparoscopic or open surgery. - Demonstrate situational awareness and monitors blood loss.

	• Can assess and manage an unstable patient. • Is able to perform an emergency undocking procedure. • Recognises early warning signs of complications in patients who have had surgery. • Manages complications after surgery and can determine the need for care from the high dependency unit (HDU).
Can lead and manage robotic theatre in an emergency	• Understands the importance of 'human factors' in the context of the robotic theatre environment. • Manages any complication calmly and requests help early, as and when needed, as part of working in a MDT. • Puts patient in a safe ergonomic position in the theatre to keep them safe. • Is able to communicate clearly with the scrub and anaesthetic teams, and assistants during an emergency. • Safely removes instruments under their direct vision.

Evidence to inform decision – examples of evidence (not mandatory requirements)

• Evidence of setting up local robotic teaching programme • Reflective practice • Feedback from trainees and theatre staff • Attend theatre team briefing and World Health Organization checklist • Attend risk management meetings	• NOTSS • CbD • Mini-CEX • Feedback from trainees • TO2 • Local and deanery teaching

Mandatory requirements

- OSATS
  - docking and undocking of robot

Knowledge criteria

- Understands why it is important to communicate with the scrub team and assistant
- Aware of the impact of human factors on running a safe theatre list to reduce complications during surgery
- Understands what you need to do with the robot system before removing instruments
- Understands how to overcome a system error in an emergency
- Understands that uninterrupted power supply to robot components is essential
- Teaching skills and giving clear instructions
- Understands the importance of giving precise instructions to assistant to perform arterial clip application to prevent bleeding
- Is able to give supportive, constructive feedback to trainees and assistants
- Has knowledge of how to perform an emergency undocking procedure and knows how to communicate with the team
- Can prevent excessive blood loss during a surgical procedure
- Effectively communicates with recovery and ward staff

4. GMC Generic Professional Capabilities (GMCs)

The key skills in the RAGS CiPs also map to a variety of generic professional capabilities (GPCs). When providing evidence of their progress in this SITM, learners should make sure that it also displays progress/capability in the GMC GPCs, such as dealing with complexity, teamwork and leadership, and knowledge of patient safety issues.

Mapping to the GPCs
Domain 1: Professional values and behaviours
Domain 2: Professional skills
Domain 3: Professional knowledge
Domain 4: Capabilities in health promotion and illness prevention
Domain 5: Capabilities in leadership and team-working
Domain 6: Capabilities in patient safety and quality improvement
Domain 7: Capabilities in safeguarding vulnerable groups
Domain 8: Capabilities in education and training
Domain 9: Capabilities in research and scholarship

Learners can expect to be assessed on their wider skills as a medical professional, their skills in leadership and teamwork, and their level of clinical competence. Evidence showing progress in these areas will result in the learner progressing through the SITM.

To help learners and Educational Supervisors determine what acceptable progress looks like, there is a Statement of Expectations for each RAGS CiP.

	Statement of Expectations for the RAGS SITM
Meeting expectations for the RAGS CiP1	Learners are meeting expectations and are able to practice as a gynaecological robotic surgeon in a Minimal Access Unit (MAS unit) within an MDT (demonstrating competence in robotic theatre setup, docking and assisting). Learners are aware of the principles of the robotic system and the fundamentals of the robotic system components and instrumentation. They have level 5 core surgical skills knowledge of how to position the patient for robotic surgery.
Meeting expectations	Learners are meeting expectations and can provide high-quality surgery for pelvic pathology using robotic assistance. They have the knowledge

for the RAGS CiP2	and skills to assess patients preoperatively, request appropriate imaging and liaise with other specialities as required. Learners are able to counsel patients appropriately and have a selection criteria for robotic assisted surgery, maintaining the laparoscopic approach where feasible. They can advocate for enhanced recovery, are competent in recognising intraoperative or postoperative complications and ask for appropriate assistance when needed. Learners have completed OSATS for robotic procedural tasks.
Meeting expectations for the RAGS CiP3	Learners are meeting expectations and can recognise, assess and manage emergencies in the robotic theatre. They have good communication skills and liaise with theatre, anaesthetic, recovery and postoperative teams as required by World Health Organization safe surgical processes. Learners will discuss their training needs during the theatre brief and have clear lines of responsibilities during an emergency. Leaners have participated in emergency skills drill procedures to prepare for an emergency event. Learners have undertaken at least one NOTSS assessment during the RAGS SITM.

The CiP knowledge criteria show the processes/frameworks a learner should understand and the clinical knowledge they must have if they want to work in robotic assisted gynaecological surgery. This is more in-depth than the knowledge base expected for the MRCOG. The key skills and descriptors outline the expected learning outcomes for the SITM. However, learners will not experience the entire range of possible scenarios during their training for this SITM; therefore, after completing the module they should continue their learning and skill development through their independent practice as a robotic gynaecological surgeon and at MDT meetings.

5. Procedures associated with the RAGS CiPs

The procedures required to complete this SITM are listed below. A learner can show progress in these procedures through OSATS, procedure logs and other forms of evidence.

If a procedure is marked with *, the learner will require three summative competent OSATS to demonstrate the level of competency needed to complete the SITM.

Procedures	Level by end of training	CiP1	CiP2	CiP3
Docking and undocking of robot*	5	X	X	X
Robotic assisted hysterectomy*	5	X	X	
Robotic assisted myomectomy	1	X		

Procedures	Level by end of training	CiP1	CiP2	CiP3
Robotic assisted excision of rectovaginal endometriosis	1	X		
Robotic assisted hysterectomy for gynaecological cancer with or without (+/-) lymph node dissection	1	X		
Robotic assisted procedure for pelvic floor prolapse or incontinence	1	X		

The 'level by end of training' corresponds to the levels of entrustability defined in Section 5.4 of the Special Interest Training Definitive Document. Level 5 indicates that a learner should be able to perform the procedure independently.

OSATS are not assigned a level of entrustability, rather they are assessed as being *competent* or *working toward competence.* The entrustability levels here are given to guide the assessor in judging whether the learner has reached the required degree of independence at the end of training.

6. Evidence required

As learners progress through SITM training they are expected to collect evidence which demonstrates development and acquisition of the key skills, procedures and knowledge. This evidence will be reviewed by the SITM Educational Supervisor when they are making their assessment for each CiP. Examples of types of evidence a learner may use to show progress in the SITM are given below. **Please note that this list shows possible, not mandatory, types of evidence** (see Section 5.6 in the Special Interest Training Definitive Document for more detail).

If workplace-based assessments are listed, then at least one must be presented as evidence. The emphasis should be firmly on the **quality** of evidence, not the quantity.

• Objective Structured Assessment of Technical Skills (OSATS) **(mandatory)**	• Case presentations
• Case-based discussions (CbD)	• Quality improvement activity
• Mini-Clinical Evaluation Exercise (Mini-CEX)	• Certification of training courses
• NOTSS	• Attendance at relevant meetings
• Reflective practice	• Participation at QA visits

• Team observation (TO2), including self-observation (SO)	• BIARGS and robotic eLearning platform
• Local, Deanery and National Teaching	• Case log
• RCOG (and other) eLearning	• Relevant publication
• Procedural log	

The table below may be useful for learners to see whether a specific workplace-based assessment can be used as evidence of progress in a specific RAGS CiP:

RAGS CiP	Online modules / Possible courses	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
1: The doctor can be an effective assistant within the multidisciplinary robotic surgical team.	Online modules / Simulator training certification	Simulator task based	X	X	X	X	X
2: The doctor uses robotic assistance to provide high-quality surgery for pelvic pathology.	Log book / Audit project / Dry lab/Wet lab robotic courses / Training courses	X	X	X	X	X	X
3: The doctor can recognise, assess and manage complications and	Skills drill / Robotic courses / Human factors	X	X		X	X	X

RAGS CiP	Online modules	OSATS	Mini-CEX	CbD	NOTSS	TO1/ TO2	Reflective practice
	Possible courses						
emergencies in robotic theatre.	Communication courses						

7. Career guidance

Learners can only undertake two SITMs at any one time, and a minimum of two SITMs are required to obtain a CCT in obstetrics and gynaecology.

The RAGS SITM is the contingent SITM for the Gynaecological Surgical Care SITM. The latter must have been commenced, with appropriate surgical aptitude demonstrated, before undertaking the RAGS SITM. This combination is recommended if a learner aspires to a special interest post in complex gynaecological surgery assisted by robots. Training opportunities for the RAGS SITM will be relatively few in number to begin with because this is an emerging mode of gynaecological surgery. It is expected that more training opportunities will be available once more trainers are proficient in this mode of surgery, and more units have invested in robots.

For further career advice, learners should have a discussion with their SITM Director.

8. Further resources

The further resources listed below can be found on the RCOG Curriculum 2024 webpages:

- Essential Curriculum Guide
- Special Interest Training Definitive Document (containing the 2024 curricula for SITMs and SIPMs)
- British and Irish Association of Robotic Gynaecological Surgeons (BIARGS)

Find out more at

rcog.org.uk/curriculum2024

Royal College of
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