

Dear representatives of ESGO accredited centers,
ESGO invites you to become **founding members** of the pivotal ESGO vision:

ESGO Council 2021 - 2023

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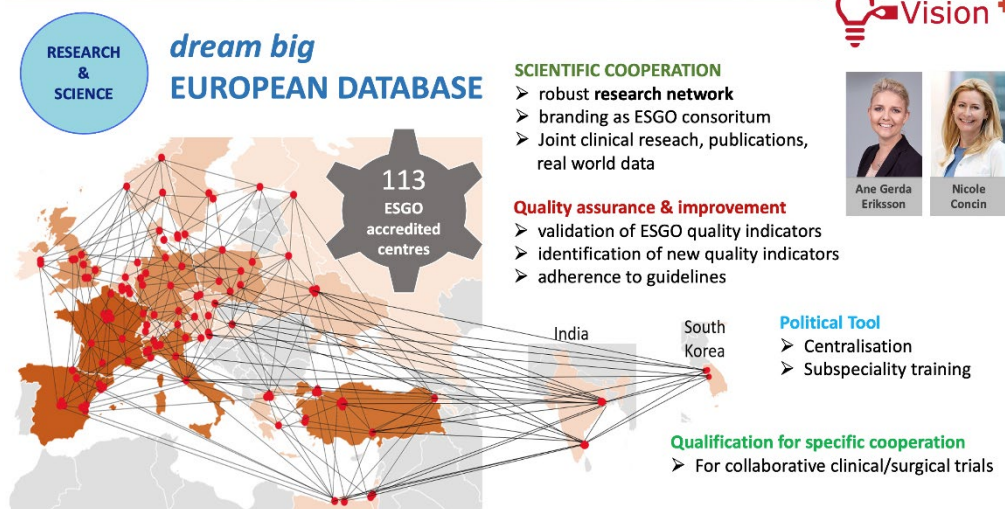
**COMBINED FORCES of ESGO ACCREDITED CENTERS
in THE ESGO EUROPEAN DATABASE of Gynaecological Cancers**

At present, ESGO has accredited a total of **113 centers** in Europe and beyond. This includes training centers as well as centers accredited for advanced ovarian cancer surgery and endometrial cancer surgery. We invite you to strengthen the scientific collaboration among ESGO accredited centers and to build a **robust research network of highest impact** sharing real-world clinical data in The ESGO European Database.

The goal of The ESGO European Database, based on our consortium of ESGO accredited centers, is **joint clinical research**. This includes the validation of ESGO quality indicators, identification of new quality indicators, analysis on guideline adherence and generation of real-world data in gynaecological oncology.

Results of our joint research will drive **scientific progress, quality assurance and improvement** in gynaecological oncology, and will be utilized as a **political tool to drive centralization and subspecialty training** for the benefit of our patients.

Strengthen scientific collaboration among ESGO accredited centres



ESGO vision: First public presentation at the Presential Session of ESGO congress 2022 Berlin

Initiation Project:

We invite you to participate in the first project of The ESGO European Database, i.e. **“Validation of the ESGO Quality Indictors in Advanced Ovarian Cancer Surgery”**.

In this project the criteria of the published 10 Quality Indicators in Ovarian Cancer surgery (which built the basis for ESGO accreditation for advanced ovarian cancer surgery; Querleu et al, IJGC 2016; Fotopoulou/Concin et al, IJGC 2020) will be evaluated for their prognostic value in our network of ESGO accredited centers.

What is needed from you:

- Accredited centers will provide their **clinical data related to the 10 Quality Indicators in advanced ovarian cancer surgery and follow-up data** on recurrence free- and overall survival for Quarters 1 and 2 (6-month period) of the past 3 years, i.e. 2020, 2021, 2022 (*an excel- template of all variables will be provided by ESGO*).
Importantly, ALL incoming patients with newly diagnosed advanced stage (III/IV) ovarian cancer in the specified 6-month periods must be documented (also cases who never underwent surgery) in order to avoid selection bias.
- Ethics Committee approval at your centers will need to be obtained (a project description for Ethics Committee submission will be provided by ESGO)
- Accredited centers will enter their data into the established REDCap system of The ESGO European Database. It is up to each center to either directly enter data on a case-by-case basis into REDCap (similar to an eCRF) or to complete the provided excel-template of variables and simply upload it into REDCap.
In any case, personalized access to REDCap (username, password) will be provided by ESGO for each participating center after receipt of written approval by the local Ethics Committee. Online-training on how to use REDCap related to the ESGO European Database will be provided.

What are your benefits:

- Be founding members of one of the highest impact endeavours supporting ESGO's mission towards progress in gynaecological oncology in Europe and beyond
- Joint publication of the results from this initiation project in the ESGO Journal, International Journal of Gynaecological Cancer, with at least one authorship per participating ESGO accredited center as part of the collaborative group (ESGO consortium of accredited centers).
- Visibility of all participating ESGO accredited centers in the upcoming ESGO information campaign on The ESGO European Database (including ESGO newsletters, social media accounts, webpage etc).
- If your center is **already an ESGO accredited center for advanced ovarian cancer surgery**:
By participation in this initial project (covering 2020, 2021, 2022), and by continued yearly data entry for new cases from Q1 and Q2, and outcomes updates of previously entered cases, you will not need to apply for re-accreditation. ESGO can evaluate your center after 5 years based on the data provided in The ESGO European Database.
- If your center is **not yet ESGO accredited for advanced ovarian cancer surgery**:
By participation in this initial project, you will learn where you stand in terms of qualification for ESGO accreditation in advanced ovarian cancer surgery.
You will also be invited to continue yearly data entry for new cases from Q1 and Q2, and outcomes updates of previously entered cases. As soon as your center meets the ESGO quality criteria for accreditation in advanced ovarian cancer surgery, you will be invited to add the missing data to complete the past 3 years (additional Quarters 3 and 4), and will be granted ESGO accreditation if meeting the quality criteria based on the complete dataset of the past 3 years.

Time-line in the founding project:

- March 2023: Ethics committee submission by your center.
- June 2023: Data submission by your center to the ESGO European Database via REDCap.
- July/August 2023: Data analysis by ESGO.
- September 2023: Teleconference with all participating ESGO accredited centers; presenting and jointly discussing results of our founding project “Validation of quality indicators in advanced ovarian cancer surgery”
- 28th September- 1st October 2023: Presentation of results at the ESGO annual congress in Istanbul. We hope to see you all there!

Medium-Term Organization:

In the medium-term future, we aim to make participation in the ESGO European Database mandatory for all new applicants for ESGO accreditation and re-accreditations. Exact definition of this partnership with mutual benefits and rights, as well as funding opportunities for The ESGO European Database are currently being explored.

NEXT STEP:

Please confirm your **principal INTEREST** in cooperating with ESGO in the **founding project of the ESGO consortium of accredited centers and The ESGO European Database**, i.e. “*Validation of quality indicators in Advanced Ovarian Cancer Surgery*” based on the past 3 years data of Q1 and Q2, **no later than 28th of February 2023** in an email to “database@esgo.org”.

We are aiming for **high coverage of ideally ALL 113 ESGO accredited centers**.

ESGO will compile the list of participating ESGO accredited centers and send further detailed information, the project description for Ethics Committee submission, and the excel template of variables to all centers who have confirmed their interest in participation by March 1st 2023.

We look forward to realizing this pivotal first project with you, which will be a substantial milestone toward the ESGO vision of The ESGO European Database.

With sincere gratitude for your cooperation with ESGO, and for supporting our mission of improving the health and well-being of women with gynaecological malignancies.

The ESGO Task Force on The ESGO European Database:



Prof. Nicole Concin
ESGO president



Prof. Ane Gerda Eriksson
Chair ESGO accreditation committee



Prof. Christoph Grimm
ESGO Task Force European Database

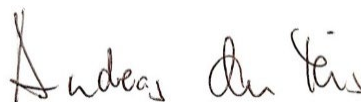


Prof. Viola Heinzelmänn
Ambassador for ESGO Candidacy program

ESGO advisors:



Prof. Ignace Vergote
ESGO Life-time award winner (2019)



Prof. Dr. med. Dr. hc Andreas du Bois
ESGO Life-time award winner (2021)

on behalf of ESGO council

Attachments:

- Initial and updated publication on ESGO quality indicators for advanced ovarian cancer surgery (Querleu et al, IJGC 2016; Fotopoulou/Concin et al, IJGC 2020)

European Society of Gynaecologic Oncology Quality Indicators for Advanced Ovarian Cancer Surgery

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Objectives: The surgical management of advanced ovarian cancer involves complex surgery. Implementation of a quality management program has a major impact on survival. The goal of this work was to develop a list of quality indicators (QIs) for advanced ovarian cancer surgery that can be used to audit and improve the clinical practice. This task has been carried out under the auspices of the European Society of Gynaecologic Oncology (ESGO).

Methods: Quality indicators were based on scientific evidence and/or expert consensus. A 4-step evaluation process included a systematic literature search for the identification of potential QIs and the documentation of scientific evidence, physical meetings of an ad hoc multidisciplinary International Development Group, an internal validation of the targets and scoring system, and an external review process involving physicians and patients.

Results: Ten structural, process, or outcome indicators were selected. Quality indicators 1 to 3 are related to achievement of complete cytoreduction, caseload in the center, training, and experience of the surgeon. Quality indicators 4 to 6 are related to the overall management, including active participation to clinical research, decision-making process within a structured multidisciplinary team, and preoperative workup. Quality indicator 7 addresses the high value of adequate perioperative management. Quality indicators 8 to 10 highlight the need of recording pertinent information relevant to improvement of quality. An ESGO-approved template for the operative report has been designed. Quality indicators were described using a

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administrative and meeting expenses support. The decision to elaborate a set of quality assurance criteria has been made by the Guidelines and Quality Assurance of the ESGO, with the approval of the ESGO Council. The only external funding source was a grant from the Institut National du Cancer (INCa, Paris, France). The ESGO is a nonprofit knowledgeable society. The INCa is a French government agency.

The authors declare no conflicts of interest.

Andreas du Bois and Ignace Vergote contributed equally to this work. The working group (including all authors) is collectively responsible for the decision to submit for publication. Denis Querleu and François Planchamp have chaired the working group as a physician and a methodologist, respectively. They have written the first draft of the manuscript. Systematic literature search was completed by François Planchamp. All other contributors have actively participated to the working group, given personal input, reviewed the manuscript, and have given final approval before submission.

Supplemental digital contents are available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's Web site (www.ijgc.net).

structured format specifying what the indicator is measuring, measurability specifications, and targets. Each QI was associated with a score, and an assessment form was built.

Conclusions: The ESGO quality criteria can be used for self-assessment, for institutional or governmental quality assurance programs, and for the certification of centers. Quality indicators and corresponding targets give practitioners and health administrators a quantitative basis for improving care and organizational processes in the surgical management of advanced ovarian cancer.

Key Words: Ovarian cancer, Cytoreduction, Quality assurance

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Ovarian cancer is the leading cause of death among all gynecologic cancers, with most patients presenting with advanced stage tumors, as defined by the spread of the disease outside the pelvis.^{1,2} As the surgical management of advanced ovarian cancer involves complex surgery, quality of surgical care is a major component of the multidisciplinary management of the disease. Implementation of a quality management program in surgery has a major impact on survival of patients with advanced ovarian cancer.^{3,4}

The European Society of Gynaecological Oncology (ESGO) has taken a position to promote the training of gynecological surgeons treating especially advanced stages of gynecologic cancer, incorporating colorectal and upper abdominal resection techniques.⁵ In keeping with this policy, the decision to elaborate a set of quality assurance criteria, using a rigorous methodology, has been made by the Guidelines and Quality Assurance Committee of the ESGO, with the approval of the ESGO Council.

The aim of this project was to develop a list of quality indicators (QIs) for advanced ovarian cancer surgery that can be used to audit and improve the clinical practice in a straightforward and practical way. The key characteristics of an ideal indicator are clear definition, clinical relevance, measurability (including targets), feasibility in clinical practice, and a scientific basis. The QIs and proposed targets are based on the standards of practice determined from scientific evidence and/or expert consensus. These QIs give practitioners and health administrators a quantitative basis for improving care and organizational processes. They also facilitate the documentation of quality of care, the comparison of performance of structures, and the establishment of organizational priorities as a basis for accreditation.

The philosophy behind the project is to improve the average standard of surgical care by providing a set of quality criteria which can be used for self-assessment, for institutional quality assurance programs, for governmental quality assessment, and for the ESGO certification of centers, some of them with the special award of ESGO center of excellence, with the ultimate goal of building a European network of ESGO centers dedicated to ovarian cancer surgery. The mindset is not to be punitive but to incentivize. The targets defined by the workgroup are considered as optimal achievements, not as potential arguments to penalize or litigate physicians or institutions. Certified centers and centers of excellence can make the certification

known to physicians, patients, patient advocacy groups, and lay persons.

METHOD

Quality indicators for advanced ovarian cancer surgery were developed using a 4-step evaluation process inspired by published development processes and earlier initiatives, identified from a systematic literature search carried out in MEDLINE and selected Web sites (see Appendix 1, Supplemental Digital Content 1, <http://links.lww.com/IGC/A398>). This process development included 3 physical meetings of an ad hoc International Development Group (IDG) (Table 1). The strengths of this process are (1) multidisciplinary of an international experts panel, (2) scientific evidence and/or international expert consensus to support the QIs, (3) patients' involvement in the process, (4) use of an external review process (international validation by physicians and patients), (5) use of a structured format to present the QIs, and (6) management of potential conflicts of interests.

Nomination of an IDG

The ESGO Guidelines and Quality Assurance committee nominated the IDG members, who were approved by the ESGO Council, which placed the project under the leadership of the first author (gynecologic oncologist, chair) and the second author (methodologist, co-chair). One objective was to select active physicians who have demonstrated leadership in quality improvement through research, administrative responsibilities, or committee membership to serve as expert panel. The second objective was to assemble a multidisciplinary group. It was therefore essential to include professionals on the group from relevant disciplines so that their multidisciplinary perspective would influence the validity and acceptability of the chosen indicators (surgery, medical oncology, pathology, radiology, anesthesiology, gynecologic oncology, radiation oncology, clinical science). The third requirement was a balanced representativity of countries across Europe.

The experts of the IDG were required to complete a declaration of interest form, and to promptly inform the ESGO council if any change in the disclosed information occurred during the course of the project. The completed declaration of interest forms were reviewed by the surgical and methodologic co-chair.

TABLE 1. Development process—a 4-step evaluation process

Evaluation Steps	Development Process Framework
	Nomination of multidisciplinary IDG members
	Identification of potential QIs (n = 15)
	Identification of scientific evidence
Evaluation #1	IDG members independently evaluate the relevance and feasibility of each QI
Evaluation #2	IDG members discuss each potential QI (1st meeting). Ten QIs were retained
	Synthesis of scientific evidence
Evaluation #3	External international panel of physicians and patients evaluates the relevance and feasibility of retained QIs (international review)
	IDG members discuss and integrate the comments of international reviewers (2nd meeting). A scoring system is designed
Evaluation #4	Internal validation of the scoring system. The workgroup members fill a self-assessment form. Definition and target of criteria not universally met by expert centers are modified (3rd meeting)

Identification of Potential QIs

A bibliographic search was carried out to identify existing guidelines and published indicators using a systematic literature search in MEDLINE and selected Web sites (see Appendix 2, Supplemental Digital Content 2, <http://links.lww.com/IGC/A399>). References were selected if they described indicators developed by other agencies or synthesized research evidence describing practice contributing to improve patient outcomes (guidelines or consensus statements). Five previous initiatives publishing QIs for advanced ovarian cancer surgery were identified.^{6–10} The surgical and methodologic co-chairs compiled a list of 15 possible quality assurance domains as follows: inclusion in the surgical team of a medical oncologist, surgery performed by a gynecologic oncologist, inclusion of patients in clinical trials, delay between decision to treat and treatment, pelvic and para-aortic lymphadenectomy, pretreatment multidisciplinary decision-making process, perioperative management, prospective reporting of complications, midline laparotomy, volume of ovarian surgery, pathology report, operative report, intraoperative frozen section, complete surgical resection, and preoperative investigations.

Identification of Scientific Evidence

Another systematic literature search was then conducted in MEDLINE to identify available scientific evidence which supports the 15 possible quality domains (see Appendix 3, Supplemental Digital Content 3, <http://links.lww.com/IGC/A400>). The reference list of each identified article was reviewed for other potentially relevant papers. The bibliography was also supplemented by additional references provided by the IDG members.

Evaluation of the Potential QIs

A description of 15 possible QIs was then formatted as a questionnaire which was submitted by e-mail to the IDG members. Experts were asked to evaluate each indicator according to relevance and feasibility in clinical practice. Responses were pooled and organized according to consensus

about relevance and feasibility. The results of this first evaluation were sent to experts who convened during the first 1-day meeting. Acceptance, rejection, or the need for further consideration of each indicator was discussed during the meeting. Candidate QIs were retained if they were supported by scientific evidence and/or when a consensus among experts was obtained.

Ten QIs were retained by the IDG members. The 5 remaining indicators which were not retained as a result of lack of supporting evidence, or of duplication of quality information were (1) inclusion in the medical team of a medical oncologist (addressed in the multidisciplinary management), (2) delay between the decision to treat and treatment (lack of evidence and no large consensus among experts), (3) midline laparotomy (addressed in the complete resection and operative report item), (4) intraoperative frozen sections (however, availability of frozen section examination by a specialized pathologist is strongly encouraged), and (5) pelvic and para-aortic lymphadenectomy (removal of enlarged nodes is part of complete cytoreduction and is the standard in patients with stage III based on lymph node involvement only; however, there is no evidence of increased overall survival when routine comprehensive node dissection is performed after complete intraperitoneal cytoreduction).

Synthesis of Scientific Evidence

For the 10 retained QIs, the systematic literature search as described in Appendix 3 (Supplemental Digital Content 3, <http://links.lww.com/IGC/A400>), has been extended until July 1, 2015, to update the documentation for the second 1-day meeting. All retrieved articles have been methodologically and clinically appraised. After the selection and critical appraisal of the articles, a summary of the scientific evidence has been developed. To classify the risk of bias or confounding in the identified studies, we used the Oxford Center for Evidence-Based Medicine level of evidence.¹¹

External Evaluation of the Retained QIs (International Review)

The ESGO Council established a large panel of 232 practicing ESGO members and 31 patient-representatives.

These international reviewers were independent from the IDG. Another requirement was a balanced representativity of countries across Europe. The 10 retained QIs were formatted as a questionnaire and were sent by e-mail to the international reviewers who were asked to evaluate each indicator according to relevance and feasibility in clinical practice (physicians only). Open comments were encouraged. Quantitative and qualitative evaluations were returned by 84 independent physicians and by 8 patients with ovarian cancer (the list of international reviewers is available online at ESGO Web site, <http://www.esgo.org/>). Responses were pooled and sent to experts who convened during the second 1-day meeting. The pooled results of the external quantitative evaluation were examined, and confirmed the choice of the 10 QIs (see Appendix 4, Supplemental Digital Content 4, <http://links.lww.com/IGC/A401>). All comments were reviewed and discussed by the IDG members. A first version of the QIs was then printed and circulated at the time of the 19th meeting of the ESGO in Nice.

On the basis of the first version of the QIs, the targets, along with a tentative scoring system, were then tested in the institutions of the workgroup members. The members were asked to fill a self-assessment form. All 13 surgical members of the workgroup responded. As expected, all experts' institutions fulfilled the criteria, but contrasted findings cast doubts on the wording of the first version of the criterion 1.2, regarding the rate of primary debulking surgery. The definition of the criterion 1.2 was consequently modified at the time of a third meeting. The second version of the list and the scoring system are presented in this article.

RESULTS

Each retained QI is categorized as structural, process, or outcome indicator.¹² Each retained QI description specifies what the indicator is measuring. The measurability specifications are then detailed (Table 2). The latter highlights how the indicator will actually be measured in practice to allow audits. In this regard, the timeframe for assessment of criteria is the last calendar year. Further to measurement of the indicator, a target indicates the level which each unit/center should be aiming at to meet quality requirements. When appropriate, 2 or 3 targets were defined: an optimal target, expressing the best possible option for patients; a minimal target, expressing the minimal requirement when practical feasibility factors are taken into account; and intermediate target, if necessary. Targets were based on evidence whenever available, on the personal experience or database of development group members, on expert consensus, and on feedback from the physician's external reviewers. Full description of supporting evidence is available on the ESGO Web site (<http://www.esgo.org/>).

Quality indicators 1 to 3 are related to caseload in the center, training, skills, and experience of the surgeon and the surgical team. The panel decided that there is overwhelming evidence to support the use of complete cytoreduction in advanced stages of the disease as the best QI of the surgical procedure. Complete cytoreduction seems to be the best surrogate marker for the final overall outcome, defined as overall survival. Because overall survival can be measured only years after the completion of surgery, surrogacy was felt

necessary. However, structuration of a survival database is strongly recommended. Caseload per center has been found to have a prognostic impact. The cutoff derived from relevant studies is in the order of 20 cases per year, including any surgery for ovarian cancer, and does not take into account the number of involved surgeons. As a result, the panel decided to set a more stringent minimum requirement of 20 surgeries for advanced ovarian cancer surgery per center. Furthermore, the panel felt that the cutoff of 20 surgeries is probably not adapted to account for the need of a relevant team experience. As a result, an intermediate and an optimal target of 50 and 100, respectively, were set. In addition, the panel wanted to make clear that the umbrella of a center with sufficient caseload cannot replace sufficient individual surgical expertise, and therefore defined that more than 95% of the surgeries should be performed or supervised by surgeons operating at least 10 patients with ovarian cancer a year. Finally, the panel identified and highlighted the high need to appropriately structure the training of gynecologic oncologists to ascertain that future patients with ovarian cancer will be operated on by a certified gynecological oncologist or, in countries where certification is not organized, by a trained surgeon dedicated to the management of gynecologic cancer (accounting for more than 50% of his or her practice) or having completed an ESGO-accredited fellowship. Again, skills to successfully complete complex abdominal and pelvic surgery procedures necessary to achieve complete cytoreduction must be available. Finally, it is emphasized that caseload and certification per se does not guarantee quality if updated skills are not available.

Quality indicators 4 to 6 are related to the overall management of the patients with ovarian cancer. Although the association between the active participation of each individual center to clinical research and survival is probably multifactorial, there is evidence that survival is better in centers participating to clinical trials.¹³ The panel concluded that, for a number of reasons, including the need for assessment of novel therapies, participation in clinical trials should be formally encouraged. The decision-making process within a structured multidisciplinary team including a gynecological oncologist as defined in QIs 2 and 3, a radiologist with a special interest in gynecologic oncology, a pathologist (if a biopsy is available) with a special interest in gynecologic cancer, and a physician certified to deliver chemotherapy is considered mandatory for the management planning of every individual patient, before any surgery or neoadjuvant chemotherapy. Of great importance is that preoperative imaging excludes from cytoreductive surgery those patients with unresectable distant parenchymal metastases, and secondary ovarian neoplasms—such as deriving from the gastrointestinal tract or lymphomas—by suitable methods such as up-to-date abdominal and thoracic imaging, the ratio of plasma CA 125 and CEA levels, and/or by biopsy under radiologic or laparoscopic guidance.

Quality indicator 7 addresses the high value of adequate anesthesia and perioperative care to ensure an optimal surgical outcome, with not only reduction of surgical morbidity but also the facilities and personnel, to properly manage the complications when they occur.¹³ The panel concluded that maximal cytoreductive surgery for advanced

TABLE 2. Presentation of QIs

QI 1—Rate of Complete Surgical Resection

Type	Outcome indicator
Description	Complete abdominal surgical resection is defined by the absence of remaining macroscopic lesions after careful exploration of the abdomen. Whenever feasible, localized thoracic disease is resected. Surgery can be decided upfront, or planned after neoadjuvant chemotherapy. However, the quality assurance program must take into account that patients who can be operated upfront with a reasonable complication rate benefit most from primary debulking surgery.
Specifications	(i) Complete resection rate (all patients): <ul style="list-style-type: none"> • Numerator: no. patients with advanced ovarian cancer undergoing complete surgical resection • Denominator: all incoming patients with advanced ovarian cancer (ii) Proportion of stage III–IV patients who are operated upfront: <ul style="list-style-type: none"> • Numerator: stage III–IV patients undergoing primary cytoreductive surgery • Denominator: all incoming patients with untreated advanced ovarian cancer
Target(s)	(i) Complete resection rate (all patients): <ul style="list-style-type: none"> • Optimal target: >65% • Minimum required target: >50% (ii) Proportion of primary debulking surgeries (stage III–IV patients): ≥50%
Scoring rule	(i) 5 if the optimal target is met, 3 if the minimum required target is met (ii) 3 if the target is met

QI 2—No. Cytoreductive Surgeries Performed Per Center and Per Surgeon Per Year

Type	Structural indicator (no. upfront or interval cytoreductive surgeries performed per center) Process indicator (no. surgeries per surgeon per year)
Description	Only surgeries with an initial objective of complete cytoreduction are recorded. Exploratory endoscopies, exploratory laparotomies, or surgeries limited to tissue biopsy that do not include at least a bilateral salpingo-oophorectomy (if applicable), hysterectomy (if applicable), and a comprehensive peritoneal staging including omentectomy are not included.
Specifications	Numerator: (i) no. cytoreductive surgeries as defined previously performed per center per year; (ii) no. cytoreductive surgeries as defined previously performed per surgeon per year. Secondary and tertiary procedures are accepted. Denominator: not applicable
Target(s)	(i) No. surgeries performed per center per year: <ul style="list-style-type: none"> • Optimal target: $n \geq 100$ • Intermediate target: $n \geq 50$ • Minimum required target: $n \geq 20$ (ii) ≥95% of surgeries are performed or supervised by surgeons operating at least 10 patients a year
Scoring rule	(i) 5 if the optimal target is met, 3 if the intermediate target is met, 1 if the minimum required target is met (ii) 3 if the target is met

QI 3—Surgery Performed by a Gynecologic Oncologist or a Trained Surgeon Specifically Dedicated to Gynecological Cancers Management

Type	Process indicator
Description	Surgery is performed by a certified gynecologic oncologist or, in countries where certification is not organized, by a trained surgeon dedicated to the management of gynecologic cancer (accounting for more than 50% of his practice) or having completed an ESGO-accredited fellowship. Skills to successfully complete abdominal and pelvic surgery procedures necessary to achieve complete cytoreduction must be available.
Specifications	Numerator: no. patients with advanced ovarian cancer operated by a specialist (as defined previously) Denominator: all patients undergoing surgery for advanced ovarian cancer

TABLE 2. (Continued)

Target(s)	≥90%
Scoring rule	3 if the target is met

QI 4—Center Participating in Clinical Trials in Gynecologic Oncology

Type	Structural indicator
Description	The center actively accrues patients in clinical trials in gynecologic oncology
Specifications	Numerator: not applicable Denominator: not applicable
Target(s)	Not applicable
Scoring rule	3 if the center actively accrues patients in clinical trials in gynecologic oncology

QI 5—Treatment Planned and Reviewed at a Multidisciplinary Team Meeting

Type	Process indicator
Description	The decision for any major therapeutic intervention has been taken by a multidisciplinary team (MDT) including at least a surgical specialist as defined previously (QI 2 and QI 3), a radiologist, a pathologist (if a biopsy is available), and a physician certified to deliver chemotherapy (a gynecologic oncologist in countries where the subspecialty is structured and/or a medical oncologist with special interest in gynecologic oncology).
Specifications	Numerator: no. patients with advanced ovarian cancer for whom the decision for therapeutic intervention(s) has been taken by an MDT Denominator: all patients with advanced ovarian cancer undergoing therapeutic intervention(s)
Target(s)	≥95%
Scoring rule	3 if the target is met

QI 6—Required Preoperative Workup

Type	Process indicator
Description	Unresectable parenchymal metastases have been ruled out by imaging. Ovarian and peritoneal malignancy secondary to gastrointestinal cancer has been ruled out by suitable methods, for example, plasma CA 125 and CEA levels, and/or by biopsy under radiologic or laparoscopic guidance.
Specifications	Numerator: no. patients with advanced ovarian cancer who had undergone cytoreductive surgery and who were offered minimum preoperative workup as defined previously Denominator: all patients with suspected advanced ovarian cancer who underwent cytoreductive surgery
Target(s)	≥95%
Scoring rule	3 if the target is met

QI 7—Preoperative, Intraoperative, and Postoperative Management

Type	Structural indicator
Description	The minimal requirements are (1) intermediate care facility, and access to an intensive care unit in the center are available; and (2) an active perioperative management program is established*
Specifications	Numerator: not applicable Denominator: not applicable
Target(s)	Not applicable
Scoring rule	3 if the minimal requirements are met.

QI 8—Minimum Required Elements in Operative Reports

Type	Process indicator
Description	Operative report is structured. Size and location of disease at the beginning of the operation must be described. All the areas of the abdominal cavity† must be described. If applicable, the size and location of residual disease at the end of the operation, and the reasons for not achieving complete cytoreduction must be reported.

(Continued on next page)

TABLE 2. (Continued)

Specifications	Numerator: no. patients with advanced ovarian cancer undergoing cytoreductive surgery who have a complete operative report that contains all required elements as defined previously Denominator: all patients with advanced ovarian cancer undergoing cytoreductive surgery
Target(s)	90%
Scoring rule	3 if the target is met

QI 9—Minimum Required Elements in Pathology Reports

Type	Process indicator
Description	Pathology report contains all the required elements listed in the International Collaboration on Cancer Reporting (ICCR) histopathology reporting guide.‡§
Specifications	Numerator: no. patients with advanced ovarian cancer undergoing cytoreductive surgery who have a complete pathology report that contains all required elements as defined in ICCR histopathology reporting guide Denominator: all patients with advanced ovarian cancer undergoing cytoreductive surgery
Target(s)	≥90%. The tolerance within this target reflects situations where it is not possible to report all components of the data set due to poor quality of specimen.
Scoring rule	3 if the target is met

QI 10—Existence of a Structured Prospective Reporting of Postoperative Complications

Type	Outcome indicator
Description	Data to be recorded are reoperations, interventional radiology, readmissions, secondary transfers to intermediate or intensive care units, and deaths.
Specifications	Numerator: no. recorded serious postoperative complications or deaths occurred among patients with advanced ovarian cancer who have undergone cytoreduction Denominator: all complications occurred among patients with advanced ovarian cancer who have undergone cytoreduction
Target(s)	Optimal target: 100% of complications are prospectively recorded Minimum required target: selected cases are discussed at morbidity and mortality conferences
Scoring rule	3 if the optimal target is met, 1 if the minimum required target is met

*Details of perioperative management include (nonexhaustive list) preoperative hemoglobin optimization and iron deficit correction; correction of denutrition and immunonutrition according the current guidelines; fluid management, involving a Goal-Directed Therapy (GDT) policy rather than liberal fluid therapy without hemodynamic goals. However, the superiority of GDT compared to restrictive fluid strategy remains unclear. There is no recognized standard method of monitoring; pain management, including in the absence of contraindication the use of epidural analgesia to avoid opioids; although routine premedication is no longer recommended, prevention of postoperative nausea and vomiting should be systematic.

†Ovaries, tubes, uterus, pelvic peritoneum, paracolic gutters, anterior parietal peritoneum, mesentery, peritoneal surface of the colon and bowel, liver, spleen, greater and lesser omentum, porta hepatis, stomach, Morrison pouch, lesser sac, undersurface of both hemidiaphragms, pelvic and aortic nodes and if applicable pleural cavity.

‡<https://www.rcpa.edu.au/Library/Practising-Pathology/ICCR/Cancer-Datasets>.

§McCluggage WG, et al. Data set for reporting of ovary, fallopian tube and primary peritoneal carcinoma: recommendations from the International Collaboration on Cancer Reporting (ICCR). *Mod Pathol* (2015).

ovarian cancer cannot be undertaken in hospitals without the availability of at least an intermediate care facility, or without access to an intensive care unit. In addition, there is a definite need for a comprehensive perioperative management program including (nonexhaustive list) preoperative hemoglobin optimization and iron deficit correction; correction of malnutrition and immunonutrition according to the current guidelines; fluid and fluid shift management, involving a Goal-Directed Therapy (GDT) policy rather than liberal fluid therapy without hemodynamic goals—even if the superiority of GDT compared to restrictive fluid strategy remains unclear, with no recognized

standard method of monitoring available. The panel also emphasized the significant value of adequate pain management, with an epidural service available; routine premedication not being longer recommended, whereas prevention of postoperative nausea and vomiting should be systematic.

Quality indicators 8 to 10 highlight the need for a complete and transparent information flow on the management and surgical outcome of the patient, with the objective of recording information relevant to future patient care, communication with colleagues, assessment of quality, and monitoring of improvement of quality. The operative report must be

structured. Size and location of disease at the beginning of the operation must be described. All the areas of the abdominal and pelvic cavity (ovaries, tubes, uterus, pelvic peritoneum, paracolic gutters, anterior parietal peritoneum, mesentery, peritoneal surface of the colon and bowel, liver, spleen, greater and lesser omentum, hepatic port hepatic, stomach, Morison pouch, lesser sac, surface of both hemi diaphragms, pelvic and para-aortic lymph nodes, and if applicable pleural cavity) must be evaluated and described. If applicable, the size and location of residual disease at the end of the operation, and the reasons for not achieving complete cytoreduction must be reported. An ESGO-approved template will be made available on the ESGO

Web site. The pathology report should contain all the required elements listed in the International Collaboration on Cancer Reporting histopathology reporting guide. The tolerance regarding the targets for QIs 8 and 9 reflects emergency situations, or impossibility to correctly assess the abdominal and pelvic cavity, or poor quality of surgical specimens. Finally, although it seems unrealistic to define a number of postoperative complication rates that would seem acceptable, because this depends on the extent of the surgery and patients' condition, it is considered mandatory to properly monitor surgical morbidity and mortality during the first 30 days after surgery within structured morbidity and mortality meetings

TABLE 3. Self-Assessment Form

QIs	Targets (Tick if Applicable)	Scoring Rules
1. Rate of complete surgical resection		
1.1. Rate of complete surgical resection	>65% <input type="checkbox"/>	Score: 5
	51%–65% <input type="checkbox"/>	Score: 3
	≤50% <input type="checkbox"/>	Score: 0
1.1. Rate of primary debulking surgeries	≥50% <input type="checkbox"/>	Score: 3
	<50% <input type="checkbox"/>	Score: 0
2. No. cytoreductive surgeries performed per center and per surgeon per year		
2.1. No. cytoreductive surgeries performed per center per year	≥100 <input type="checkbox"/>	Score: 5
	50–99 <input type="checkbox"/>	Score: 3
	20–49 <input type="checkbox"/>	Score: 1
2.1. Surgeries supervised or performed by surgeons operating at least 10 patients a year	≥95% <input type="checkbox"/>	Score: 3
	<95% <input type="checkbox"/>	Score: 0
3. Surgery performed by a gynecologic oncologist or a trained surgeon specifically dedicated to gynecological cancers management	≥90% <input type="checkbox"/>	Score: 3
	<90% <input type="checkbox"/>	Score: 0
4. Center participating in clinical trials in gynecologic oncology	Yes <input type="checkbox"/>	Score: 3
	No <input type="checkbox"/>	Score: 0
5. Treatment planned and reviewed at a multidisciplinary team meeting	≥95% <input type="checkbox"/>	Score: 3
	<95% <input type="checkbox"/>	Score: 0
6. Required preoperative workup	≥95% <input type="checkbox"/>	Score: 3
	<95% <input type="checkbox"/>	Score: 0
7. Preoperative, intraoperative, and postoperative management	Yes <input type="checkbox"/>	Score: 3
	No <input type="checkbox"/>	Score: 0
8. Minimum required elements in operative reports	≥90% <input type="checkbox"/>	Score: 3
	<90% <input type="checkbox"/>	Score: 0
9. Minimum required elements in pathology reports	≥90% <input type="checkbox"/>	Score: 3
	<90% <input type="checkbox"/>	Score: 0
10. Existence of a structured prospective reporting of postoperative complications	All complications are prospectively recorded <input type="checkbox"/>	Score: 3
	There is no prospective complication database but selected cases are discussed at morbidity and mortality conferences <input type="checkbox"/>	Score: 1
	Other situations <input type="checkbox"/>	Score: 0

→Please register the sum of your scores←

and through an established mechanism to prospectively assess, report, and describe complications.

Finally, each QI was associated with a score, and an assessment form was built (Table 3). The form is designed to support the self-assessment, or the external assessment of an institution. The sum of the individual scores being 40, it has been decided to consider that an institution meeting 80% of the score (score 32) provides a satisfactory surgical management of advanced ovarian cancers.

DISCUSSION

Complete surgery, compared with any surgery leaving behind any residual tumor, even minimal, is a strong and independent predictor of survival, and consequently the best possible surrogate for survival outcome.^{14–17} Consequently, completion of complete surgery, along with the necessary training, surgical skills, experience, and perioperative management, is the centerpiece of the QI set. A debate about the timing of surgery has been ongoing since the pivotal publication of the EORTC 55971 trial comparing primary debulking surgery to interval debulking surgery after neoadjuvant chemotherapy.¹⁸ Although many centers favor a policy of neoadjuvant chemotherapy, primary debulking surgery is still considered as the preferred option whenever possible with reasonable morbidity, taking into account the extent of surgery required to achieve complete resection and the patient's status.¹⁶ A subset of patients with relatively low tumor burden (peritoneal metastasis less than 5 cm in diameter) in the EORTC 55971 trial clearly benefit from primary debulking surgery.¹⁸ Anyway, complete surgery is the main objective of interval debulking surgery as well.¹⁷ Interestingly, the results of the EORTC 55971 are valid in the subset of countries with high optimal resection rate, in line with the current primary objective of ovarian cancer surgery.

Implementation of QIs mentioning caseload of institutions and individual surgeons is a potentially conflictual topic. The definitions of the cutoff targets at 20 surgeries for advanced ovarian cancer per year and per center and at 10 surgeries per year per surgeon are based on available literature, whereas the 50 and 100 targets are the result of expert consensus. Large-scale studies have provided evidence that caseload is associated with better survival outcomes^{19–22} and less perioperative mortality.²³ The cutoff previously mentioned, which a significant effect on outcome is found, has been consistently found to be in the range of 20 per year (20 in 2 studies,^{19,22} and at 15–25 in another large-scale study²¹). In addition, patients managed in a low-volume hospital are less likely to receive guideline adherent care.²¹ The combination of a high-volume hospital and high-volume surgeon has been found to be a favorable prognostic factor, with a 1.31 hazard ratio compared to low-volume hospital and surgeon.²⁰ The workgroup has decided to use the 20 cases per institution and per year cutoff as a minimal requirement, while observing that a higher caseload is most probably beneficial, if only through the need to structure a proper multidisciplinary team. In addition, although the literature data are based on all types of ovarian cancer, it has been decided to target advanced ovarian cancers only, making the requirement more stringent. Finally,

specialty and experience of the surgeon has been highlighted to prevent physicians with very low experience from benefiting from the caseload of the whole institution.

There is evidence that centralization of care at the national level of 2 developed countries, Norway and Denmark, results in an improvement of survival.^{24,25} At the same time, the implementation of a quality assurance program in an institution with a high caseload results in substantial improvement in survival outcomes.^{3,4} Consequently, it is emphasized that centralization and volume are not the only driver of improvement. As volume is an imprecise measure of quality of health care, quality assurance remains mandatory in referral centers.

Current developments of the European quality assurance program include an ESGO-approved template for operative report which is available in the ESGO Web site and a methodology for ESGO certification, including a scoring system for the purpose of self-assessment or certification. Certification will be based on the completion of application forms on the grounds of database-generated numbers and declaration of adherence to structural, process, and outcome indicators. Only centers performing more than 20 surgeries for advanced ovarian cancer and able to provide exact figures documenting the responses to the assessment form will be considered. The following items must be documented for each case referred and managed in the applicant institution during the last calendar year: age, performance status, FIGO stage and sub-stage, patient offered primary debulking surgery or surgery after neoadjuvant chemotherapy, complete cytoreduction or not. An ESGO certification process, based on the declaration of the institutions, and possibly on audits on-site, is being developed. Institutions reaching the 32 score will be certified for 5 years if the ad hoc ESGO committee validates the application. Institutions scoring less than 32 but over 28 will be asked to resubmit after one year when they reach the 32 certification score. In addition to the standard certification award, centers of excellence will be defined on the basis of high volume (≥ 50 stage III–IV cytoreductive surgeries per year), a position of national PI of at least one clinical trial on ovarian cancer, one peer-review publication (first or last author) on ovarian cancer in the last three years, and an accredited ESGO fellowship. The centers of excellence award will be a tool to build a network for education—hosting visitors and/or organizing teaching sessions with live surgery demonstrations and/or providing material for ESGO e-academy—and research.

Admittedly, targets and corresponding scores have been largely arbitrarily set. Target figures may depend on the casemix of the center. The system will have to be refined in the future with the feedback provided by the scoring of candidate centers, and by a prospective research on the multivariate correlation between survival outcome, characteristics of the patient, and indicators.

It is hoped that governments and health care administrations will understand that implementing a global quality assurance program is currently a necessary and cost-effective way to improve the outcome of patients with ovarian cancer.²⁶ Fostering access of patients to high-quality care through organized centralization, coverage of care costs, and funding of institutions is especially needed in countries where there is no structured policy at a national level. In conclusion, the

implementation of institutional quality assurance programs is a universal way to improve quality of care, even in high-volume centers. The ESGO QIs and certification program may be a major tool to facilitate this achievement.

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Quality indicators for advanced ovarian cancer surgery from the European Society of Gynaecological Oncology (ESGO): 2020 update

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In 2016, the European Society of Gynaecological Oncology (ESGO) developed a list of quality indicators (QIs) for advanced ovarian cancer surgery with the aim of helping and auditing clinical practice.¹ The QIs were based on evidence-based research, meetings of a multidisciplinary International Development Group, an internal validation of the targets and scoring system, and an external review process involving physicians and patients. The ultimate plan was for QIs to be used for self-assessment, quality assurance programs, and for certification of centers.

More recently, a number of amendments were made after several years of implementation of our initially defined QIs into clinical practice and accreditation of centers. This was done in order to emphasize and focus on the surgical scores. The amendments were defined and proposed during a new meeting of the interdisciplinary group that aimed to target the clinical significance of the QIs and assessed evidence after implementation of the initial scoring system.

The definitions and specifications of the actual QIs remain unchanged and have been previously described in detail.¹ Also, the total 40 score, with a 32 cut-off, is maintained.

The process of definitions and modifications are summarized as follows. The QIs for advanced ovarian cancer surgery were developed using a four-step evaluation process based on physical meetings of the multidisciplinary committee. The process was founded on the following values: (1) multidisciplinary international expert panel, (2) evidence-based medicine and expert consensus, (3) patient engagement, (4) external review process, (5) structured format to present QIs, and (6) strict assessment of conflicts of interests. This development process is outlined in [Table 1](#).

Each of the QIs is categorized as a structural, process, or outcome indicator. The specifications of how these are measured are outlined in [Table 2](#). The time frame for assessment criteria is set as the last calendar year. In addition to the actual measurement of the indicator, a target indicates the level that each center should aim to meet such quality requirements. Targets are based on available scientific evidence, personal experience of group members, on expert consensus, and on feedback from external reviewers. Quality indicators 1 to 3 deal with caseload in the center, training, skills, and experience of surgeons and

Table 1 Development process: a four-step evaluation process (unmodified, as per original manuscript¹)

Evaluation step	Development process framework
Evaluation #1	Nomination of multidisciplinary IDG members. Identification of potential QIs (n=15). Identification of scientific evidence. IDG members independently evaluate the relevance and feasibility of each QI.
Evaluation #2	IDG members discuss each potential QI (first meeting). Ten QIs were retained. Synthesis of scientific evidence.
Evaluation #3	External international panel of physicians and patients evaluates the relevance and feasibility of retained QIs (international review). IDG members discuss and integrate the comments of the international reviewers (second meeting). A scoring system is designed.
Evaluation #4	Internal validation of the scoring system. The workgroup members complete a self-assessment form. Definition and target of criteria not universally met by expert centers are modified (third meeting).

IDG, interdisciplinary group; QI, quality indicator.



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Society statement

Table 2 Presentation of quality indicators

QI 1: Rate of Complete Surgical Resection

Type	Outcome indicator
Description	Complete abdominal surgical resection is defined by the absence of remaining macroscopic lesions after careful exploration of the abdomen. Whenever feasible, localized thoracic disease is resected. Surgery can be decided upfront, or planned after neoadjuvant chemotherapy. However, the quality assurance program must take into account that patients who can be operated upfront with a reasonable complication rate benefit most from primary debulking surgery.
Specifications	<ol style="list-style-type: none"> Complete resection rate (all patients): <ul style="list-style-type: none"> Numerator: number of patients with advanced ovarian cancer undergoing complete surgical resection Denominator: all incoming patients with advanced ovarian cancer Proportion of stage III-IV patients undergoing upfront surgery: <ul style="list-style-type: none"> Numerator: stage III-IV patients undergoing primary cytoreductive surgery Denominator: all incoming patients with untreated advanced ovarian cancer
Target(s)	<ol style="list-style-type: none"> Complete resection rate (all patients): <ul style="list-style-type: none"> Optimal target: >65% Minimum required target: >50% Proportion of primary debulking surgeries (stage III-IV patients): >50%
Scoring rule	<ol style="list-style-type: none"> 8 if the optimal target is met, 3 if the minimum required target is met 3 if the target is met

QI 2: Number of Cytoreductive Surgeries Per Center and Per Surgeon Per Year

Type	Structural indicator (number of upfront or interval cytoreductive surgeries performed per center) Process indicator (number of surgeries per surgeon per year)
Description	Only surgeries with an initial objective of complete cytoreduction are recorded. Exploratory endoscopies, exploratory laparotomies, or surgeries limited to tissue biopsy that do not include at least a bilateral salpingo-oophorectomy (if applicable), hysterectomy (if applicable), and a comprehensive peritoneal staging including omentectomy are not included.
Specifications	<p>Numerator:</p> <ol style="list-style-type: none"> Number of cytoreductive surgeries as defined previously performed per center per year Number of cytoreductive surgeries as defined previously performed per surgeon per year. Secondary and tertiary procedures are accepted. <p>Denominator: not applicable</p>
Target(s)	<ol style="list-style-type: none"> Number of surgeries performed per center per year: <ul style="list-style-type: none"> Optimal target: $n \geq 100$ Intermediate target: $n \geq 50$ Minimum required target: $n \geq 20$ $\geq 95\%$ of surgeries are performed or supervised by surgeons operating on at least 20 patients a year
Scoring rule	<ol style="list-style-type: none"> 7 if the optimal target is met, 4 if the intermediate target is met, 1 if the minimum required target is met 5 if the target is met

QI 3: Surgery Performed by a Gynecologic Oncologist or a Trained Surgeon Specifically Dedicated to Gynecological Cancer Management

Type	Process indicator
Description	Surgery is performed by a certified gynecologic oncologist or, in countries where certification is not organized, by a trained surgeon dedicated to the management of gynecologic cancer (accounting for more than 50% of his/her practice) or having completed an ESGO-accredited fellowship. Skills to successfully complete abdominal and pelvic surgery procedures necessary to achieve complete cytoreduction must be available.
Specifications	<p>Numerator: Number of patients with advanced ovarian cancer operated on by a specialist (as defined previously)</p> <p>Denominator: all patients undergoing surgery for advanced ovarian cancer</p>
Targets	$\geq 90\%$
Scoring rule	3 if the target is met

QI 4: Center Participating in Clinical Trials in Gynecologic Oncology

Type	Structural indicator
Description	The center actively accrues patients in clinical trials in gynecologic oncology.

Continued

Table 2 Continued

QI 1: Rate of Complete Surgical Resection

Specifications	Numerator: not applicable Denominator: not applicable
Targets	Not applicable
Scoring rule	three if the center actively accrues patients in clinical trials in gynecologic oncology

QI 5: Treatment Planned and Reviewed at a Multidisciplinary Team Meeting

Type	Process indicator
Description	The decision for any major therapeutic intervention has been taken by a multidisciplinary team including at least a surgical specialist as defined previously (QI 2 and QI 3), a radiologist, a pathologist (if a biopsy is available), and a physician certified to deliver chemotherapy (a gynecologic oncologist in countries where the subspecialty is structured and/or a medical oncologist with special interest in gynecologic oncology).
Specifications	Numerator: Number of patients with advanced ovarian cancer for whom the decision for therapeutic intervention(s) has been taken by a multidisciplinary team Denominator: all patients with advanced ovarian cancer undergoing therapeutic intervention(s)
Targets	≥95%
Scoring rule	3 if the target is met

QI 6: Required Pre-operative Workup

Type	Process indicator
Description	Unresectable parenchymal metastases have been ruled out by imaging. Ovarian and peritoneal malignancy secondary to gastrointestinal cancer has been ruled out by suitable methods, for example, serum CA125 and CEA levels, and/or by biopsy under radiologic or laparoscopic guidance.
Specifications	Numerator: Number of patients with advanced ovarian cancer who had undergone cytoreductive surgery and who were offered minimum pre-operative workup as defined previously Denominator: all patients with suspected advanced ovarian cancer who underwent cytoreductive surgery
Targets	≥95%
Scoring rule	1 if the target is met

QI 7: Pre-operative, Intra-operative, and Post-operative Management

Type	Structural indicator
Description	The minimal requirements are (1) intermediate care facility, and access to an intensive care unit in the center are available and (2) an active peri-operative management program is established.*
Specifications	Numerator: not applicable Denominator: not applicable
Targets	Not applicable
Scoring rule	1 if the minimal requirements are met

QI 8: Minimum Required Elements in Operative Reports

Type	Process indicator
Description	Operative report is structured. Size and location of disease at the beginning of the operation must be described. All areas of the abdominal cavity† must be described. If applicable, the size and location of residual disease at the end of the operation, and the reasons for not achieving complete cytoreduction, must be reported.
Specifications	Numerator: Number of patients with advanced ovarian cancer undergoing cytoreductive surgery who have a complete operative report that contains all required elements as defined previously Denominator: all patients with advanced ovarian cancer undergoing cytoreductive surgery
Targets	90%
Scoring rule	3 if the target is met

QI 9: Minimum Required Elements in Pathology Reports

Type	Process indicator
Description	Pathology report contains all the required elements listed in the ICCR histopathology reporting guide.‡§

Continued

Society statement

Table 2 Continued

QI 1: Rate of Complete Surgical Resection

Specifications	Numerator: Number of patients with advanced ovarian cancer undergoing cytoreductive surgery who have a complete pathology report that contains all required elements as defined in ICCR histopathology reporting guide Denominator: all patients with advanced ovarian cancer undergoing cytoreductive surgery
Targets	>90%. The tolerance within this target reflects situations where it is not possible to report all components of the data set due to poor quality of specimen
Scoring rule	1 if the target is met

QI 10: Structured Prospective Reporting of Post-operative Complications

Type	Outcome indicator
Description	Data to be recorded are reoperations, interventional radiology, readmissions, secondary transfers to intermediate or intensive care units, and deaths.
Specifications	Numerator: Number of recorded serious post-operative complications or deaths occurring among patients with advanced ovarian cancer who have undergone cytoreduction Denominator: all complications occurring among patients with advanced ovarian cancer who have undergone cytoreduction
Targets	Optimal target: 100% of complications are prospectively recorded Minimum required target: selected cases are discussed at morbidity and mortality conferences
Scoring rule	3 if the optimal target is met, 1 if the minimum required target is met

Updated scoring system is indicated by bold type.

*Details of peri-operative management include (non-exhaustive list) pre-operative hemoglobin optimization and iron deficit correction; correction of denutrition and immunonutrition according to the current guidelines; fluid management, involving a goal-directed therapy (GDT) policy rather than liberal fluid therapy without hemodynamic goals. However, the superiority of GDT compared with restrictive fluid strategy remains unclear. There is no recognized standard method of monitoring; pain management, including in the absence of contraindication; the use of epidural analgesia to avoid opioids; although routine pre-medication is no longer recommended, prevention of post-operative nausea and vomiting should be systematic.

†Ovaries, tubes, uterus, pelvic peritoneum, paracolic gutters, anterior parietal peritoneum, mesentery, peritoneal surface of the colon and bowel, liver, spleen, greater and lesser omentum, porta hepatis, stomach, Morrison pouch, lesser sac, undersurface of both hemidiaphragms, pelvic and aortic nodes, and, if applicable, pleural cavity.

‡<https://www.rcpa.edu.au/Library/Practising-Pathology/ICCR/Cancer-Datasets>

§McCluggage WG, Judge MJ, Clarke BA, et al. Data set for reporting of ovary, fallopian tube and primary peritoneal carcinoma: recommendations from the International Collaboration on Cancer Reporting (ICCR). *Mod Pathol* 2015;28:1101–22.

CEA, carcinoembryonic antigen; ESGO, European Society of Gynaecological Oncology; ICCR, International Collaboration on Cancer Reporting; QI, quality indicator.

the surgical team. Quality indicators 4 to 6 are related to the overall management of patients with advanced ovarian cancer. Quality indicator 7 addresses the value of adequate anaesthesiology and peri-operative care to assure an optimal surgical outcome, focusing on not only the reduction of surgical morbidity but also optimization of facility and personnel to appropriately manage complications. Quality indicators 8 to 10 emphasize the need for a complete and transparent flow of information on the management and surgical outcome of patients, which encompasses information documentation, communication with consultants and colleagues, assessment of quality, and monitoring of improvement.

Each QI is associated with a score, and an assessment form is required (Table 3). The goals of the form are to support the self-assessment, or the external assessment, of a given institution. The sum of the individual scores being 40, it was decided that an institution meeting 80% of the score (score 32) provides satisfactory surgical management of patients with advanced ovarian cancer.

Summary of changes:

- ▶ The scoring of the criteria 3, 4, 8, and 10 is maintained.
- ▶ The rating of the other criteria is modified in favor of purely surgical items: the score of the criterium 5 is reduced to 2. The scores of the criteria 6, 7, and 9 are reduced to 1 each.

- ▶ The seven (7) points made available after implementation of the reduced score are assigned as follows:
 - Criterion 1.1: score increased to 8 (+3) if the optimal target is met (rates of complete cytoreduction over 65%)
 - Criterion 2.1: score increased to 7 (+2) if the optimal target is met (≥100 surgeries performed per center per year) and to score 4 (+1) if the intermediate target is met (50–99 surgeries performed per center per year)
 - Criterion 2.2: the target is modified as follows: “95% of surgeries performed by surgeons operating at least 20 patients a year” with a score 5 (+2).

There is ample evidence that centralization of care results in improved overall oncologic outcomes. ESGO has developed a number of criteria that provide centers with accreditation for ovarian cancer surgery based on parameters that will distinguish centers with the classification of either ‘Standard Accreditation’ or ‘Center of Excellence’. Those centers accredited as a Center of Excellence may then build a network for education, training, and research. These criteria are outlined in Box 1.

The new scores are presented in detail on the ESGO website (<https://www.esgo.org/ovarian-surgery-certification/>) and are valid for any new accreditation of a center for ovarian cancer surgery.

Table 3 Self-assessment form with updated scoring system

Quality indicators	Targets (tick if applicable)	Scoring points
1.1 Rate of complete surgical resection	>65%	8 (+3)
	51%–65%	3
	≤50%	0
1.2 Rate of primary debulking surgeries	≥50%	3
	<50%	0
2.1 Number of cytoreductive surgeries performed per center per year	≥100	7 (+2)
	50–99	4 (+1)
	20–49	1
2.2 Surgeries supervised or performed by surgeons operating at least 20 patients a year	≥95%	5 (+2)
	<95%	0
3 Surgery performed by a gynecologic oncologist or a trained surgeon specifically dedicated to gynecological cancers management	≥90%	3
	<90%	0
4 Center participating in clinical trials in gynecologic oncology	Yes	3
	No	0
5 Treatment planned and reviewed at a multidisciplinary team meeting	≥90%	2 (-1)
	<95%	0
6 Required preoperative workup	≥95%	1 (-2)
	<95%	0
7 Preoperative, intraoperative, and postoperative management	Yes	1 (-2)
	No	0
8 Minimum required elements in operative reports	≥95%	3
	<90%	0
9 Minimum required elements in pathology reports	≥90%	1 (-2)
	<90%	0
10. Structured prospective reporting of postoperative complications	All complications are prospectively recorded	3
	There is no prospective complication database but selected cases are discussed at morbidity and mortality conferences	1
	Other situations	0
		0

The bold numbers in parentheses indicate differences from the previous scoring system.

The ESGO certification for advanced ovarian cancer surgery is an award attributed to institutions that offer patients the specific skills, experience, organization, and dedication that are required to achieve optimal levels of surgical care.

Box 1 Modified center criteria for European Society of Gynaecological Oncology (ESGO) certification for ovarian cancer surgery: (A) Standard Accreditation and (B) Center of Excellence

A. Entry criteria for standard ESGO certification for ovarian cancer surgery (*all criteria must apply*)

- 24 complete surgeries per year in advanced stage III and IV ovarian cancer over the last 3 years (a total of 72 over the 3-year period accepted, at least 20 in the last year)
- 12 complete primary cytoreductive surgeries per year in advanced stage III and IV ovarian cancer over the last 3 years (36 over the 3-year period accepted, at least 10 in the last year)
- Secondary and tertiary surgeries for recurrences or palliative procedures are not included
- Submission of six operation and pathology reports randomly selected from the submitted database by the ESGO secretariat: three reports will be from the last year (Year 3), two reports from Year 2 and one from Year 1 from the evaluation period.

B. Additional requirements for ESGO certification for ovarian cancer surgery as a Center of Excellence (*all criteria must apply*)

- Publications: three articles on ovarian cancer per year **authored by a gynecological surgical oncology member** of the team over the last 3 years, including at least one article as first or last author over the entire period
- Number of surgeries per year: 50 complete surgeries each year in stage III or IV disease (no exceptions) over a period of 3 years. Recurrent or palliative surgeries are not considered.

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