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Assessment of the European Society of Gynaecological Oncology quality indicators in cervical cancer surgery: Application in a single tertiary government hospital in the Philippines

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Abstract:

BACKGROUND: Cervical cancer is a common malignancy among Filipino women, treated through surgery, chemotherapy, or radiation. To improve outcomes and reduce costs, the European Society of Gynaecological Oncology (ESGO) established 15 quality indicators for its surgical management. The aim of the study was to evaluate the quality of cervical cancer surgeries at a tertiary government hospital in the Philippines, using ESGO quality indicators.

METHODS: A descriptive retrospective review was conducted on medical records of early-stage cervical cancer patients who underwent radical surgery from January 1, 2019, to December 31, 2021. Data were collected using ESGO's 15 quality indicators. Incomplete records were excluded from the study. Descriptive statistics and Kaplan–Meier analysis were used.

RESULTS: Fifty-four patients underwent surgery, averaging 18 cases per year. Most surgeries (75.93%) were supervised by certified gynecologic oncologists, and 85.2% were discussed in multidisciplinary conferences. All patients had appropriate preoperative assessments and metastatic imaging. Pathology reports met the required standards, and lymph node staging was achieved in all cases. Adequate lymph node harvest was 68.18% (pelvic) and 65.91% (para-aortic). Fertility counseling was provided, although none pursued fertility-sparing treatment. Surgical complications included two vesicovaginal fistulas (3.7%). Clear margins were achieved in 92.59%, with 24.30% upstaged postoperatively. Adjuvant chemoradiotherapy rates were highest in 2019 (93.33%). No recurrences were noted for stage IB1 after a median 34-month follow-up.

CONCLUSION: The surgeries met ESGO quality standards, demonstrating that these indicators can be adapted locally, ensuring quality assurance in care.

Keywords:

Cervical cancer, European Society of Gynaecological Oncology quality indicators, quality assurance, radical hysterectomy, radical surgery

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Introduction

In the Philippines, cervical cancer is the second-leading site-specific cancer among women.^[1] Cervical cancer treatment mainly involves chemoradiation, but radical surgery is an option for some patients. In

general, in the early stage of the disease, the survival rates are comparable for both treatment techniques.^[2]

Having a robust quality management program in place has demonstrated efficacy in mitigating morbidity and reducing treatment costs, thereby enhancing

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outcomes for patients afflicted with cancer. In 2020, the European Society of Gynaecological Oncology (ESGO) formulated 15 quality indicators specifically for the surgical management of cervical cancer. These indicators are designed to refine surgical practices for cervical cancer, ensure meticulous documentation, facilitate institutional performance comparisons, and bolster oncology accreditation.^[2]

The ESGO quality indicators are classified as structural, process, or outcome measures, each with specific descriptions and targets. Indicators 1–2 address surgical volume and surgeon expertise; 3–5 cover overall management, including multidisciplinary decision-making and preoperative workup. Indicators 6–8 focus on proper documentation, whereas 9–12 assess surgical quality. Indicators 13–15 evaluate adherence to standards of care.^[3]

Study purpose

Quality improvement programs can reduce morbidity, costs, and improve life quality for cancer patients. Better surgical care also boosts outcomes for various malignancies such as breast, lung, gastric, colorectal cancers, soft tissue sarcoma, and ovarian cancer.^[4] Implementing a quality management program may boost cervical cancer survival rates.

This study aims to evaluate surgical management quality for early-stage cervical cancer at a Philippine tertiary hospital using ESGO quality indicators.

Specific objectives include: (1) determining the clinical profile of patients undergoing radical surgery in the tertiary government hospital; (2) determining the level of compliance of the tertiary government hospital to the ESGO quality indicators for the surgical treatment of cervical cancer in terms of caseload and training and experience of the surgeon, overall management, recording pertinent information (surgical reports, recording of postoperative complications), quality of surgical procedures, and compliance of management with standard of care; (3) determine the 2-year overall and disease-free survival of cervical cancer patients who underwent radical surgery.

The study also aimed to assess the applicability of ESGO quality indicators in the local setting. Their adoption may support surgical quality improvement in tertiary government hospitals through self-assessment, institutional quality assurance, government evaluations, and the development of certified cervical cancer surgery centers.

Methods

This is a descriptive retrospective study conducted in a tertiary government hospital. The study included

patients diagnosed with early-stage cervical cancer (FIGO 2018 stages IA2 to IIA1) who underwent radical surgery – either radical hysterectomy, modified radical hysterectomy, radical trachelectomy, or radical vaginal hysterectomy – between January 1, 2019, and December 31, 2021. Cases of modified radical hysterectomy for central tumor persistence were included, as they reflect curative-intent surgical management and align with ESGO's quality indicator scope. Their inclusion allows for a more comprehensive assessment of institutional surgical practices in a real-world, resource-limited setting. Only cases with complete outpatient and inpatient medical records, including surgical and pathology documentation, were eligible for inclusion. Patients were excluded if they had incomplete medical records, underwent nonradical or palliative surgical procedures.

To evaluate adherence to ESGO quality indicators, the following operational definitions and targets were used:

- Adequate case volume (QI1): At least 15 radical cervical cancer surgeries per year, as recommended by ESGO
- Qualified surgical supervision (QI2): Surgeries performed or supervised by certified gynecologic oncologists
- Participation in ongoing clinical trials (QI3): The center actively accrues patients in ongoing clinical trials (not restricted to surgery)
- Multidisciplinary planning (QI4): Case discussed in a tumor board or preoperative conference attended by multiple specialists
- Preoperative evaluation (QI5): Completion of pelvic examination, cervical biopsy, and imaging (transvaginal ultrasound, computed tomography [CT], or magnetic resonance imaging [MRI])
- Complete surgical report (QI6): Documentation of procedure, findings, and complications
- Complete pathology report (QI7): Inclusion of tumor type, grade, size, LVSI, depth of invasion, lymph node status, and margin status
- Structured prospective reporting of follow-up and 30-day post-operative morbidity (QI8): Structured reporting using a validated surgical complications scoring system
- Urological fistula rate within 30-postoperative days (QI9): Any bladder or ureteral fistula diagnosed after a procedure, calculated on the basis of data of the preceding 3 years
- Clear surgical margins (QI10): Clear vaginal and parametrial margins
- T-upstaged after surgery (QI11): T1b disease up-staged after surgery
- Recurrence rate at 2 years (QI12): Recurrence in patients with a stage pT1b1 after surgery
- Lymph node staging (QI13): Proportion of patients who has undergone lymph node assessment

- Fertility-sparing treatment (FST, QI14): Counseling potential candidates for FST
- Proportion of patients receiving adjuvant chemoradiotherapy (QI15): Number of patients receiving adjuvant chemoradiotherapy
- Recurrence-free survival (RFS): Evaluated at 2 years using Kaplan–Meier survival analysis
- Adequate lymphadenectomy: Minimum of 20 pelvic and 5 para-aortic lymph nodes harvested, based on SGOP guidelines for endometrial cancer and adapted for cervical cancer staging.

Study procedure

This retrospective study reviewed 54 early-stage cervical cancer patients who underwent radical surgery between January 2019 and December 2021, aligning with the 2018 FIGO staging system and at least 2 years of follow-up. Patients were identified through outpatient, surgical, and pathology records.

Data collection followed ESGO's 15 quality indicators, including demographics, clinical stage, histopathology, and surgery type. Performance was assessed through structural, process, and outcome indicators such as surgeon training, multidisciplinary planning, preoperative workup, report completeness, and postoperative outcomes.

Surgical quality was assessed through urologic fistula rates, margin status, upstaging rates, lymph node staging, adequacy of lymphadenectomy, and recurrence rates. Adequate lymph node harvest was defined as ≥ 20 pelvic and ≥ 5 para-aortic nodes, based on SGOP guidelines.^[2] Fertility-sparing eligibility, counseling, and uptake were also evaluated, along with receipt of adjuvant chemoradiotherapy.

Data analysis

The clinical profile of the study population and quality indicators were described through frequencies and percentages. Kaplan–Meier analysis was used to generate survival curves for overall and disease-free survival, with group comparisons performed using the log-rank test. No inferential statistics were applied, as the study's primary aim was descriptive and evaluative based on ESGO-defined benchmarks.

Results

Clinical profile

The clinical profile of the population is shown in Table 1. A total of 54 patients underwent radical surgery from 2019 to 2021. The median age was 46 years (range: 28–63), with most patients (64%) diagnosed with FIGO stage IB2. The majority underwent radical hysterectomy (85.16%), and the most common histology was squamous cell carcinoma (68.52%).

Table 1: Clinical profile of patients with cervical cancer who underwent radical surgery

Variable	Values
Age group (years), <i>n</i> (%)	
25–34	6 (11.11)
35–44	14 (25.93)
45–54	22 (40.74)
55–64	10 (18.52)
≥ 65	2 (3.70)
Preoperative diagnosis, <i>n</i> (%)	
Stage IB1	7 (12.96)
Stage IB2	35 (64.81)
Stage IIA1	4 (7.41)
Central tumor persistence	8 (14.81)
Type of surgery performed, <i>n</i> (%)	
Radical hysterectomy	46 (85.16)
Modified radical hysterectomy	8 (14.81)
Histopathology, <i>n</i> (%)	
Squamous cell carcinoma	37 (68.52)
Endocervical adenocarcinoma	9 (16.67)
Adenosquamous carcinoma	2 (3.70)
Serous carcinoma	1 (1.85)
Villoglandular carcinoma	1 (1.85)
Endometrioid carcinoma	1 (1.85)
Neuroendocrine carcinoma	3 (5.55)

Quality indicators

Quality indicators related to caseload in the center, and training and experience of the surgeon

- Quality indicator 1: The center met the ESGO minimum of 15 cases annually, with 17, 19, and 18 cases from 2019 to 2021
- Quality indicator 2: Of the 54 procedures, 75.93% were supervised by certified gynecologic oncologists.

Quality indicators related to the overall management

- Quality indicator 3: In the 3 years of evaluation, there were no ongoing clinical trials in gynecologic cancer
- Quality indicator 4: Forty-six cases (85.2%) were discussed in multidisciplinary team meetings attended by gynecologic oncologists, sonologists, and radiation oncologists. Diagnostic imaging was reviewed with a radiologist before presentation. No medical oncologist or pathologist attended any of the multidisciplinary meetings
- Quality indicator 5: All patients completed the required preoperative workup, including histologic confirmation, pelvic examination by a certified gynecologic oncologist, and ultrasound by an expert sonologist. Imaging included CT scans in 79.63% and MRI in 20.37% of cases; no positron emission tomography (PET) scans were performed.

Quality indicators related to recording pertinent information

- Quality indicator 6: Only 68.51% of surgical reports contained all ESGO-required elements. In 2019,

the duration of surgery was not documented; standardized reporting, including this detail, was implemented starting in 2020

- Quality indicator 7: Almost all pathology reports included the required ESGO elements. Provisional pathologic staging, though optional, was reported in only a few cases – 3 in 2020 and 2 in 2021
- Quality indicator 8: All patients had records of their 30-day follow-up at the outpatient clinic. There were only 2 surgical complications were recorded, both of which were vesicovaginal fistulas. These surgical complications were presented and discussed at a morbidity and mortality conference.

Quality indicators related to the quality of surgical procedures

- Quality indicator 9: Two vesicovaginal fistulas were recorded during the 3 years evaluated, with a rate of 3.7%. The first case was reported in 2019, whereas the second was reported in 2021
- Quality indicator 10: Ninety-two percent ($n = 50$, 92.59%) of all cases seen in the 3 years evaluated had clear vaginal and parametrial margins. This is below the target of >97%
- Quality indicator 11: Eleven out of 46 (24.30%) cases with a preoperative early-stage disease were upstaged after surgery. Four (36.36%) were upstaged due to tumor size, 2 (18.18%) for parametrial extension, and 5 (45.45%) for lymph node metastasis
- Quality indicator 12: Eight cases had postoperative stage 1B1. None of these cases recurred after a median follow-up of 34 months (range 29.8–38.7).

Quality indicators related to the compliance of management with the standards of care

- Quality indicator 13: All 46 early-stage patients underwent pelvic and para-aortic lymph node staging. Adequate lymph node harvest was achieved in 65.22% (pelvic) and 63.04% (para-aortic)
- Quality indicator 14: Two patients were eligible and counseled for FST, but both opted for definitive surgery
- Quality indicator 15: A high proportion of early-stage patients required adjuvant chemoradiotherapy: 93.33% in 2019, 71.42% in 2020, and 64.70% in 2021, exceeding the ESGO target of <15%.

Recurrence rate and overall survival

Among early-stage patients, the recurrence rate was 17.1%, with no recurrences in stage IB1. Overall survival (OS) and RFS showed no significant differences across stages (RFS, $P = 0.127$; OS, $P = 0.539$), as shown in Figures 1 and 2.

Discussion

The quality of surgical care as an integral part of comprehensive multidisciplinary management has

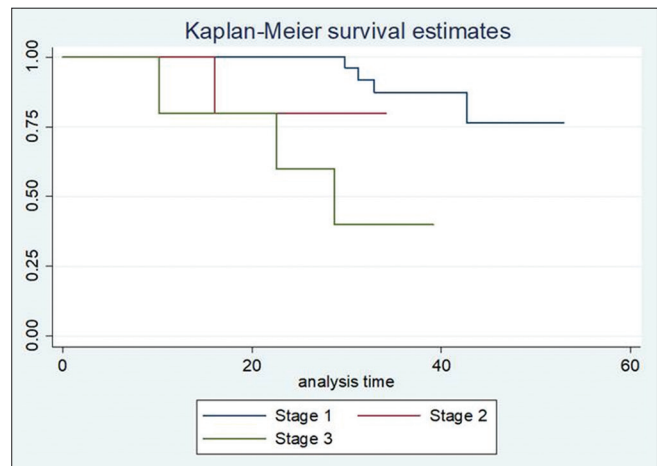


Figure 1: Recurrence free survival by final staging

demonstrated an enhancement in patient outcomes with malignancies.^[4] The implementation of a quality improvement program reduced morbidity and costs in surgical interventions.

The study showed that ESGO quality indicators are suitable for local quality assurance. As shown in Table 2, data were mainly based on each indicator's specifications. Modifications were made to indicators 11, 13, and 15: To include all early-stage diseases instead of just stage IB1, to use the SGOP Treatment Guideline for adjuvant chemoradiation rather than ESGO-ESTRO-ESP guidelines. For indicator 13, the adequacy of nodal harvest was included, aligned with the institution's training standards.

The study met 7 of the 15 quality targets listed in Table 3. The unmet targets included: surgeries performed or supervised by a certified gynecologic oncologist, participation in clinical trials, discussions in multidisciplinary meetings, completeness of surgical reports, urologic fistula rate below 3%, clear margins after surgery, low upstaging rate, and minimal need for adjuvant therapy. Data support a positive relationship between the volume of cases and outcomes, including survival, increased technical expertise, and appropriate management of complications. High-volume centers are defined as having cases of 15 to >21 in a year. The study site, being a tertiary government hospital with a training program for gynecologic oncology, has the advantage of seeing an adequate number of cervical cancer cases for radical surgeries in a year, averaging 18 cases per year.

The outcomes of surgery are linked to the surgeon's skills and experience. Trained gynecologic oncologists are more likely to perform complete radical hysterectomies, leading to better disease control. Since the study site is a training institution, most surgeries are initially performed by 3rd-year fellows, with some supervised

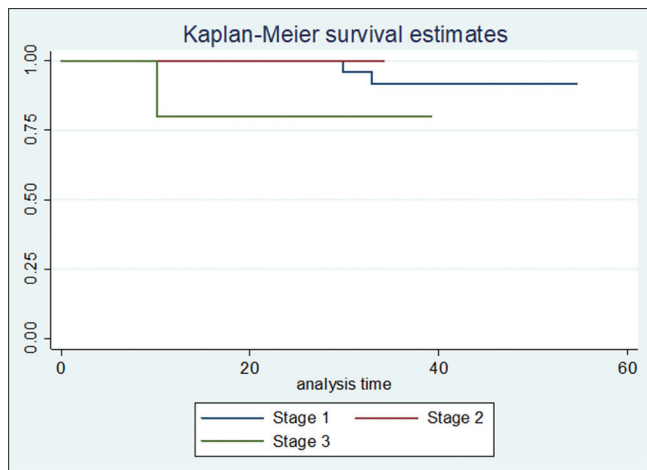


Figure 2: Overall survival by final staging

by certified gynecologic oncologists. Consequently, the 100% target for surgeon qualification is unlikely to be met. However, after the ESGO quality indicators were published in January 2020, there's been a trend toward more surgeries being supervised by certified oncologists, reflecting increased awareness of the importance of quality indicator 2.

Clinical research is essential to enhancing the quality of care. In a study by Du Bois *et al.*, patients with ovarian cancer treated in hospitals with ongoing clinical trials had a higher chance of receiving standard treatment than those treated in hospitals not participating in clinical trials.^[4] This is an important quality indicator for which the study site needs significant improvement, as there were no recorded ongoing clinical trials for gynecologic cancer for 2019–2021. As the evidence shows that institutions involved in clinical studies adhere more to the standard of care, it is important for the study site to ensure involvement in clinical trials. This could be done by providing a budget solely for gynecologic malignancy research and encouraging the consultants and trainees to venture into clinical trials.

Multidisciplinary team care is acknowledged as the optimal standard in treatment planning and patient care.^[5] In the study site, cervical cancer treatment plans can be discussed in three venues: a one-on-one discussion between the 3rd-year fellow-in-training and a gynecologic oncology consultant; a preoperative conference with fellows-in-training and multiple consultants; and an outpatient census conference attended by fellows, consultants, OB-GYN sonologists, and radiation oncologists, with other subspecialists involved as needed. The outpatient census conference is preferred for case consensus, but when unavailable, the preoperative conference serves as an alternative. During the study, four cases were discussed only in one-on-one sessions due to missed conferences, preventing full implementation of the ideal discussion process.

Complete preoperative investigations help select suitable surgical patients. Mandatory components include cervical biopsy and pelvic exam. Imaging assessment involves MRI or transvaginal ultrasound for tumor extent, and CT or PET CT for nodal and distant disease. All cases had cervical biopsies, reviewed by in-house pathologists if done externally. Pelvic exams were performed by certified gynecologic oncologists. Ultrasound was conducted by expert OB-GYN sonologists. Metastatic work-up included either CT or MRI of the abdomen and pelvis.

Evidence shows that standardized operative reports result in more complete and reliable interpretable operative data. In the absence of a standardized surgical report, required elements must be reported. In the study site, although a standardized surgical report is not in place before the year 2020, the operative technique template used in 2019 adheres to the required elements defined in the ESGO-ESTRO-ESP guidelines, except for the total duration of surgery. This component was already included in the years 2020 and 2021, when the surgical report was incorporated into the study site's electronic medical record.

In the study, almost all elements as defined in the ESGO-ESTRO-ESP guidelines^[6] were reported, except for the provisional pathologic staging, which was seen in only five patients. Based on the SGOP 2019 Clinical Practice Guidelines, it is recommended that "there should be no mention of the stage of disease in histopathologic reports."^[7] This may be the reason why provisional pathologic staging was not routinely reported.

Patients who underwent surgery in the study site were followed up a week after discharge and again 1–2 weeks later to monitor recovery and postoperative complications. Between 2019 and 2021, two complications were recorded, both vesicovaginal fistulas. The institution lacked a standardized system for reporting surgical morbidities, which were only presented at service conferences as morbidity/mortality reports. Discussion of these morbidities has the potential to improve patient outcomes, quality of care, and attitudes toward patient safety, and they contribute to the education of clinical staff.^[8] It is deemed an important component of clinical governance that provides the necessary administrative assurances that poor outcomes are being monitored and addressed.^[8]

The extensive dissection of the ureters and bladder during radical surgery for cervical cancer leads to a risk of intraoperative injuries of the ureter and the bladder and the development of post-operative fistulas.^[9] The incidence of urologic fistulas after radical surgery for cervical cancer surgery does not exceed 5.1% but can

Table 2: European Society of Gynaecological Oncology Quality Indicators for Surgical Treatment of Cervical Cancer

ESGO quality indicators	Type, description, specification, target based on ESGO guidelines	Institutional implementation
Quality indicators related to caseload in the center, and training and experience of the surgeon		
QI1	Type: Structural Indicator Description: A radical procedure is defined as one that includes parametrectomy (e.g. radical hysterectomy, radical trachelectomy, parametrectomy) Specifications: Numerator: Number of radical procedures as defined above performed per center per year; Denominator: Not applicable Targets: Optimal target: ≥ 30 Minimum required target: ≥ 15	Number of radical procedures (parametrectomies) in cervical cancer performed per center per year
QI 2	Type: Process Indicator Description: Surgery is performed or supervised by a certified gynecologic oncologist or by a trained surgeon dedicated to gynecological cancer (accounting for over 80% of his/her practice) or having completed an ESGO-accredited fellowship Specifications: Numerator: number of patients with cervical cancer operated by a surgical specialist (as defined above); Denominator: Number of patients undergoing surgery for cervical cancer Target: 100%	Proportion of surgeries supervised by a certified gynecologic oncologist (consultant) versus number of surgeries performed by a gynecologic oncologist in training (3 rd Year Fellow-in-Training) alone
Quality indicators related to the overall management		
QI 3	Type: Structural indicator Description: The center actively accrues patients in ongoing clinical trials (not restricted to surgery) in gynecological cancer Specifications: Numerator: Number of ongoing clinical trials in gynecological cancer (not restricted to surgery only); Denominator: Not applicable Target: ≥ 1	Number of ongoing clinical trials in gynecological cancer
QI 4	Type: Process indicator Description: The decision for any therapeutic intervention (excluding any diagnostic procedure – that is, biopsies or conization performed with a diagnostic intent) has been taken by a multi-disciplinary team including at least a gynecologic oncologist or a trained surgeon specifically dedicated to gynecological cancer as defined above (quality indicator 2), a radiologist, a radiation oncologist, a medical or clinical oncologist, and a pathologist Specifications: Numerator: Number of patients with cervical cancer for whom the decision for any therapeutic intervention has been made by a multi-disciplinary team; Denominator: All patients presenting with cervical cancer Target: 100%	Proportion of patients with cervical cancer for whom the treatment plan was discussed in a multi-disciplinary team meeting (outpatient census conference) versus a preoperative conference versus a one-on-one discussion
QI 5	Type: Process indicator Description: The required preoperative investigation is defined according to the ESGO-ESTRO-ESP guidelines Specifications: Numerator: Number of patients with cervical cancer for whom surgery is planned who received preoperative investigation according to the ESGO-ESTRO-ESP guidelines; Denominator: All patients with cervical cancer for whom surgery is planned Target: 100%	Proportion of patients with cervical cancer who received the minimum required preoperative investigation Cervical biopsy Physical examination by a certified gynecologic oncologist (consultant) Transvaginal ultrasound Metastatic imaging (i.e. CT scan, MRI, PET CT scan)
Quality indicators related to recording pertinent information (surgical reports, pathology reports, recording of postoperative complications)		
QI 6	Type: Process indicator Description: The required surgical report, based on the ESGO-ESTRO-ESP guidelines Specifications: Numerator: Number of patients with cervical cancer undergoing surgery who have a complete surgical report that contains all required elements as defined above Denominator: All patients with cervical cancer undergoing surgery Target: 100%	Proportion of patients with cervical cancer who had the minimum required elements in surgical reports a. Surgical approach b. Type of LNstaging c. Regions of pelvic LNdissection d. Detailed description of type of parametrial resection

Contd...

Table 2: Contd...

ESGO quality indicators	Type, description, specification, target based on ESGO guidelines	Institutional implementation
Quality indicators related to recording pertinent information (surgical reports, pathology reports, recording of postoperative complications)		
QI 7	Type: Process indicator Description: The minimum required elements in pathology and pathology reports, based on the ESGO-ESTRO- ESP guidelines Specifications: Numerator: Number of patients with cervical cancer undergoing surgery for whom all minimum required elements as defined above are reported Denominator: All patients with cervical cancer undergoing surgery Target: $\geq 90\%$	e. Type of adnexal procedure f. Blood loss g. Duration of surgery h. Intraoperative complications Proportion of patients with cervical cancer who had the minimum required elements in pathology reports: a. Description of the specimen submitted for histologic evaluation b. Macroscopic description of specimens c. Macroscopic tumor sites d. Tumor dimensions e. Histologic tumor type and tumor grade f. Presence or absence of LVSI g. Co-existing pathology h. Minimum distance of uninvolved cervical stroma i. Margin status j. LNstatus k. Pathologically confirmed distant metastases l. Provisional pathologic staging m. The result of any frozen section specimen evaluation
QI 8	Type: Outcome indicator Description: Structured prospective reporting of the follow-up and 30-day postoperative morbidity using a validated surgical complications scoring system Specifications: Numerator: Number of patients with cervical cancer who have undergone a surgery and for whom a structured prospective reporting of the follow-up and 30-day postoperative morbidity is available; Denominator: All patients with cervical cancer undergoing surgery Targets: Optimal target: $\geq 90\%$ Minimum required target: Selected cases are discussed at morbidity and mortality conferences	Proportion of patients with cervical cancer who had a report (documentation) of the follow up within 30 days postoperative, and of a 30-day postoperative morbidity - discussed in a morbidity/mortality conference
Quality indicators related to the quality of surgical procedures		
QI 9	Type: Outcome indicator Description: Any bladder or ureteral fistula diagnosed after a procedure including radical parametrectomy The fistula rate should be calculated on the basis of data of the preceding 3 years. Radical parametrectomies include radical hysterectomies, radical trachelectomies, and parametrectomies Specifications: Numerator: Number of patients treated in the preceding 3 years who develop ureteral or bladder fistulas within 30-postoperative days Denominator: All patients with cervical cancer undergoing a procedure including radical parametrectomy in the preceding 3 years Target: $\leq 3\%$	Proportion of patients with urological fistula within 30-postoperative days after a radical surgery
QI 10	Type: Outcome indicator Description: Clear surgical margins apply for both the vaginal margins and parametrial margins. Using an adequate clinical staging with modern imaging and careful preoperative vaginal assessment, as defined in the ESGO-ESTRO-ESP guidelines, positive surgical margins after a radical hysterectomy or trachelectomy should be avoided Specifications: Numerator: Number of patients after primary surgical treatment who have clear surgical margins for invasive disease in the preceding 3 years; Denominator: All patients who have undergone primary surgical treatment in the preceding 3 years Target: $\geq 97\%$	Proportion of patients after primary surgical treatment who have clear vaginal (invasive disease) and parametrial margins

Contd...

Table 2: Contd...

ESGO quality indicators	Type, description, specification, target based on ESGO guidelines	Institutional implementation
Quality indicators related to the quality of surgical procedures		
QI 11	Type: Outcome indicator Description: T-upstaging refers to detection of any involvement of parametria or vagina found on pathology which was unknown before surgery, or a stage shift from T1b1 to T1b2 or higher, from preoperative assessment to postoperative pathology Specifications: Numerator: Number of patients with stage T1b disease T-upstaged after surgery, as defined above; Denominator: All patients with a stage T1b who have undergone a surgery Target: <10%	Proportion of patients with early-stage disease (stage IB1, IB2, and IIA1) upstaged after surgery, including those with positivity of LN
QI 12	Type: Outcome indicator Description: This quality indicator applies to the common tumor types (squamous cell and usual types of adenocarcinoma) and both local or distant recurrences, irrespective of adjuvant treatment strategy Specifications: Numerator: LNs-negative pT1b1 patients whose disease recurs within 2 years after primary surgical treatment, irrespective of adjuvant treatment strategy, with a minimum of 2 years' follow-up; Denominator: All LNs-negative pT1b1 patients after primary surgical treatment, irrespective of adjuvant treatment strategy, with a minimum of 2 year's follow-up Target: <10%	Recurrence rate at 2 years in patients with a stage pT1b1 after primary surgical treatment
Quality indicators related to the compliance of management with the standards of care		
QI 13	Type: Outcome indicator Description: LNs staging is defined according to the ESGO-ESTRO-ESP guidelines Specifications: Numerator: Number of patients with a stage T1 disease who have undergone LNs staging according to the ESGO-ESTRO-ESP guidelines; Denominator: All patients with a stage T1 disease who were treated by primary surgery Target: ≥ 98%	Proportion of patients with early-stage cervical cancer (FIGO stages IB1, IB2, and IIA1) treated by primary surgery who underwent pelvic and para-aortic LNstaging. (defined as >20 for pelvic nodes and >5 for paraaortic nodes)
QI 14	Type: Structural indicator Description: Counseling of patients with stage T1b1 ≤ 2 cm disease, potential candidates for FST, is described in the ESGO-ESTRO-ESP guidelines. All eligible patients should be appropriately counseled about a possibility of FST. FST should be undertaken exclusively in centers with comprehensive expertise in this management Numerator: Number of patients with stage T1b1 ≤ 2 cm disease, potential candidates for FST, counseled according to the ESGO-ESTRO-ESP guidelines; Denominator: All patients with stage T1b1 ≤ 2 cm disease, potential candidates for FST Target: 100%	Proportion of eligible patients with early-stage cervical cancer who are a. Appropriately counseled about fertility-sparing options b. Offered and/or undergo fertility-sparing treatment (e.g., radical trachelectomy)
QI 15	Type: Structural indicator Description: Management of patients after a surgical treatment for a stage pT1b1 pN0 disease is defined according to the ESGO-ESTRO-ESP guidelines Specifications: Numerator: Number of patients receiving adjuvant chemoradiotherapy after primary surgical treatment for stage pT1b1/T2a1 pN0 disease, according to the ESGO-ESTRO-ESP guideline; Denominator: All patients with primary surgical treatment for stage pT1b1 pN0 disease Target: <15%	Proportion of patients requiring adjuvant chemoradiotherapy after primary surgical treatment for early-stage disease, as determined using the SGOP 2019 Clinical Practice Guideline criteria

FST: Fertility-sparing treatment, ESGO: European Society of Gynaecological Oncology, CT: Computed tomography, MRI: Magnetic resonance imaging, PET: Positron Emission Tomography, LN: Lymph node, QI: quality indicator

vary, depending notably on the proportion of patients with advanced disease included in the series.^[9] The target of <3% was set by expert consensus. In the study site, the reported fistula urological fistula rate from 2019 to 2021 was 3.7%, coming close to the quality indicator target of <3%.

Proper selection of patients for radical surgery is important, as this impacts the overall outcome of the patients. Upstaged cases after surgery should be avoided or, at most, kept to a minimum. A high proportion of upstaged patients after surgery reflects poor quality of preoperative imaging and surgery planning.^[3] In the study, despite all

Table 3: Evaluation of the European Society of Gynaecological Oncology quality indicators

Quality indicators	Target	2019, n (%)	2020, n (%)	2021, n (%)	Total, n (%)
1. Radical procedures performed per year	≥ 15 cases/year	17	19	18	54
2. Surgery performed by a surgical specialist					
a. Number of procedures performed by fellow assisted by consultant	≥90% of surgeries supervised by a certified gynecologic oncologist	11 (64.71)	14 (73.68)	16 (88.89)	41 (75.93)
b. Number of procedures performed by fellows only		6 (35.29)	5 (26.32)	2 (11.11)	13 (24.07)
3. Ongoing clinical trials	≥ 1	0	0	0	0
4. Multidisciplinary team meeting					
a. Number of cases discussed 1-on-1 with consultant	≥90% of cases discussed in an MDT meeting	2 (11.76)	1 (5.26)	1 (5.56)	4 (7.4)
b. Number of cases presented in preoperative conference		1 (5.88)	2 (10.53)	1 (5.56)	4 (7.4)
c. Number of cases presented for consensus in the outpatient census		14 (82.35)	16 (84.21)	16 (88.89)	46 (85.2)
5. Required preoperative investigation	100.0				
a. Cervical biopsy		17 (100.0)	19 (100.0)	18 (100.0)	54 (100.0)
i. Cervical punch biopsy		15 (88.24)	16 (84.21)	17 (94.44)	49 (90.74)
ii. Cold-knife conization		2 (11.76)	2 (10.53)	0	4 (7.41)
iii. LEEP		0	0	1	1 (1.85)
b. Pelvic examination by a consultant		17 (100.0)	19 (100.0)	18 (100.0)	54 (100.0)
c. Ultrasound		17 (100.0)	19 (100.0)	18 (100.0)	54 (100.0)
d. CT scan		17 (100.0)	14 (73.68)	12 (66.7)	43 (79.63)
e. Abdominopelvic MRI		0	5 (26.3)	6 (33.3)	11 (20.37)
f. PET scan		0	0	0	0
6. Required elements in surgical reports	100%	17 (100)	19 (100)	18 (100)	37 (68.51)
7. Required elements in pathology reports	≥90%	17 (100)	19 (100)	18 (100)	100.0
8.1. Reporting of the 30-day follow-up					
a. Yes	≥90%	17 (100.0)	19 (100.0)	18 (100.0)	100.0
b. No		0	0	0	
8.2. Presentation of postoperative morbidity/mortality in a conference					
a. Yes		1/1 (100.0)		1/1 (100.0)	
b. No		0		0	
9. Urological fistula rate within 30 days after a radical parametrectomy	≤3%	1 (5.88)	0	1 (5.56)	2 (3.70)
10. Proportion of patients after primary surgical treatment who have clear vaginal (invasive disease) and parametrial margins	≥97%	16 (94.12)	16 (84.21)	18 (100.0)	50/54 (92.59)
11. Proportion of patients with early-stage disease upstaged after surgery	≤10%	4/15 (26.67)	4/14 (28.57)	3/17 (17.65)	11/46 (24.30)
12. Recurrence rate at 2 years in patients with pT1b1N0	<10%	0/2 (0.0)	0/2 (0.0)	0/4 (0.0)	0/8 (100.0)
13. Proportion of patients with an early-stage disease treated by primary surgery who have undergone LN staging	≥98%	15/15 (100.0)	14/14 (100.0)	17/17 (100.0)	6/46 (100.0)
a. Proportion of patients with adequate pelvic LN harvest (≥20 nodes)		11 (73.33)	9 (64.29)	10 (66.67)	30 (65.22)
b. Proportion of patients with adequate para-aortic LN harvest (≥5 nodes)		8 (53.33)	10 (71.43)	11 (73.33)	29 (63.04)
14. Proportion of patients, candidates for FST, who had counseling about a possibility of FST	100%	1/1 (100.0)	0/0 (0.0)	1/1 (100.0)	2/2 (100.0)
15. Proportion of patients recommended for adjuvant chemoradio-therapy after a primary surgical treatment for an early-stage disease	<15%	14/15 (93.33)	10/14 (71.42)	11/17 (64.70)	35/46 (76.09)

FST: Fertility-sparing treatment, CT: Computed tomography, MRI: Magnetic resonance imaging, PET: Positron Emission Tomography, LN: Lymph node

patients undergoing the recommended metastatic workup using abdominopelvic CT scan or MRI, 4 (36.36%) were upstaged due to tumor size, 2 (18.18%) for parametrial extension, and 5 (45.45%) for lymph node metastasis. With a total of 24.30% early-stage disease upstaged after surgery, this was far from the target of <10%.

Ramirez *et al.*^[10] reported disease-free survival and locoregional RFS rates at 3 years of higher than 90% for patients with a stage IB1 disease, irrespective of the lymph node status and surgical approach. An RFS rate of 2 years of <90% in patients with a stage IB1 disease with negative lymph nodes after primary surgery treated

in gynecologic oncology centers should be considered a failure of management.^[3] In the study, there was no recorded recurrence of stage IB1 disease after surgery in the institution within the median follow-up of 34 months.

In our study site, complete pelvic and paraaortic lymphadenectomy is standard for early-stage cervical cancer. All cases underwent lymph node staging, with counts used for quality assurance. While standardization of adequate lymphadenectomy varies, guidelines based on endometrial cancer suggest removing 21–25 lymph nodes (20 pelvic, 5 paraaortic) to improve detection of positive nodes. The proportion of patients achieving adequate lymph node yield was similar across years (2019–2021), with no significant differences ($P = 0.86$). Factors influencing lymph node detection include the surgeon's dissection extent and the pathologist's examination.

There were only 2 cases that were eligible for FST. All eligible patients were offered the possibility of FST and referred to infertility. None of the eligible patients consented to an FST since both were already multigravida.

According to the ESGO-ESTRO-ESP guidelines,^[6] treatment for patients with early-stage cervical cancer should aim to avoid combining radical surgery and radiotherapy because of the high morbidity after combined treatment. In the study, however, a significant proportion of patients required adjuvant chemoradiotherapy – 93.33% in 2019, 71.42% in 2020, and 64.70% in 2021, far from the quality indicator target of <15%. In the SGOP 2019 Clinical Practice Guidelines, only one factor among the following is necessary to warrant adjuvant therapy: a tumor size of >2 cm, >1/3 stromal invasion, positive lines of resection, lymph node metastasis, and (+) LVSI. Following this guideline may have contributed to the high number of patients requiring adjuvant therapy. This is in contrast to the ESGO-ESTRO-ESP guidelines which recommends that adjuvant radiotherapy should be considered in the presence of a combination of risk factors at final pathology, such as tumor size, LVSI, and depth of stromal invasion.^[6]

Conclusion

This study demonstrated that the ESGO quality indicators can be used in the local setting, with some modifications based on local and institutional guidelines. Most of the quality indicators are achievable as long as the institution adheres to a standard of care. Using the ESGO quality indicators helped analyze the current practices in the study site and provided insights on how the current practice could be further improved.

Areas for improvement in the study site include (1) involvement in clinical trials; (2) presentation of all treatment plans in a multidisciplinary team meeting; (3) ensuring that all radical surgeries are supervised by a certified gynecologic oncologist; this will help in the refinement of surgical technique, in ensuring the adequacy of surgical margins, in alleviating the possibility of surgical complications, and in achieving adequate nodal harvest; and (4) ensuring good correlation between the preoperative investigations so that upstaging after surgery would be kept to a minimum, if not completely avoided; this will also, hopefully, lessen the number of patients requiring adjuvant chemoradiotherapy.

Limitations

The study is limited by its small sample size, 3-year criteria, and retrospective design. Potential biases lie on accurate and complete documentation.

Recommendations

The authors suggest a future study to remove unrecognized bias and extend the inclusion criteria timeline, thus increasing the sample size.

Ethical approval

Ethical approval has been granted by the University of the Philippines Research Ethics Board (UPMREB) Review Panel 3 last February 19, 2024 with UPMREB code number 2024-0108-01.

Authorship contributions

Keno Lorenzo Diego Ong - Involved in the conceptualization, design of the methodology, data collection and curation, writing of the original draft, review, and editing of the draft.

Ana Victoria Vallido Dy Echo - Involved in the design of the methodology, review, and editing of the draft.

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Conflicts of interest

There are no conflicts of interest.

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