JOGECA

Journal of Obstetrics
and Gynaecology of
Eastern and Central Africa

Clinical Protocol

Gynecologic Oncology

GOSK clinical management protocol for vaginal cancer in Kenya - 2026

Naomi N. Sitati[1,2*], Margaret Kilonzo[1,2], Eunice Cheserem[1,2], Anwar Z. Mohamed[1,2], Stella N. Njenga[1,2], Diana Marion[1,2], Gideon M. Mutua[1,2], Simon M. Gitau[1,2], Steven M. Ibua[1,2], Bruce O. Semo[1,2,3], Isaac M. Maingi[1,2], Yvonne N. Wekesa[1,2], Rose J. Kosgei[1,2], Alfred Mokomba[1,2], Wycliffe Musalia[1,2], Millicent Masinde[1,2], Benjamin E. Odongo[3], Jacqueline Chesang'[4], Victor T. Otieno[1,2], Francis O. Abinya[1,2], Innocent O. Maranga[1,2,5]

[1]Department of Obstetrics and Gynecology, University of Nairobi, Nairobi, Kenya
[2]Department of Obstetrics and Gynecology, Kenyatta National Hospital, Nairobi, Kenya
[3]Department of Obstetrics and Gynecology, Kenyatta University, Nairobi, Kenya
[4]Department of Public and Global Health, University of Nairobi, Nairobi, Kenya
[5]School of Medical Sciences, Amref International University, Nairobi, Kenya

***Correspondence:** naomisitati@gmail.com

DOI:

Copyright © 2026, The authors. Published by JOGECA. This is an open access article under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/), which permits unrestricted reuse, distribution, and reproduction in any medium provided the original author(s) and the source are properly cited.

Abstract

Objective: To develop a standardized, evidence-based clinical management protocol for vaginal cancer in Kenya through adaptation and contextualization of relevant international clinical practice guidelines.

Methods: The protocol was developed using a guideline adaptation approach to align recommendations from high-quality international clinical practice guidelines with Kenya's healthcare system and resource context. A multidisciplinary development panel comprising gynecologic oncologists, pathologists, radiologists, oncology nurses, pharmacists, radiation oncologists, public health specialists, and patient representatives participated in the process. Panel members received technical training from the University of Nairobi and Kenyatta National Hospital on evidence-based guideline adaptation, including standardized appraisal, systematic evaluation of guidelines, and contextualization to local realities. A systematic search of PubMed and Google Scholar was conducted to identify relevant clinical practice guidelines and supporting evidence. Four guidelines were identified and independently appraised using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) instrument. The National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology: Vaginal Cancer, the European Society of Gynaecological Oncology (ESGO) Guidelines for the Management of Patients with Vaginal Cancer, the Japan Society of Gynaecological Oncology (JSGO) Guidelines for the Treatment of Vulvar Cancer and Vaginal Cancer, and the Council for Medical Schemes, South Africa (CMS-SA) Final PMB Definition Guidelines for Vaginal and Vulvar Cancer were selected for analysis and adaptation, with the CMS-SA guideline adapted with modifications for the Kenyan context. The selected guidelines were systematically reviewed and their recommendations contextualized to Kenya's healthcare and resource setting.

Results: The resulting protocol addresses the clinical evaluation and diagnosis, referral, histopathological assessment, staging, pre-treatment investigations, and management of vaginal cancer. It provides recommendations on the use of surgery, radiotherapy, chemotherapy, and systemic therapy according to disease stage and histological subtype. The protocol also addresses the management of recurrent and advanced disease, post-treatment surveillance, supportive and palliative care, and selected special clinical circumstances. It further supports multidisciplinary care, appropriate referral, participation in clinical trials, and consideration of emerging therapies where clinically appropriate and available.

Recommendations: The protocol provides standardized, evidence-based recommendations for the diagnosis, staging, treatment, surveillance, and management of recurrent vaginal cancer, adapted to the Kenyan healthcare and resource context. It is intended to support consistent clinical decision-making, multidisciplinary care, appropriate use of available resources, and equitable access to evidence-based cancer care across Kenya.

Keywords: Kenya; Vaginal cancer; Vaginal neoplasms

List of abbreviations

Abbreviation	Definition
AGREE II	Appraisal of Guidelines for Research and Evaluation II
BSC	Best supportive care
BT	Brachytherapy
CCRT	Concurrent chemoradiation
CIN	Cervical intraepithelial neoplasia
CMS-SA	Council for Medical Schemes, South Africa
CT	Computed tomography
DVT	Deep vein thrombosis
EBRT	External beam radiotherapy
ECOG	Eastern Cooperative Oncology Group
ESGO	European Society of Gynaecological Oncology
FIGO	International Federation of Gynecology and Obstetrics
HIV	Human immunodeficiency virus
HPV	Human papillomavirus
IORT	Intraoperative radiation therapy
JSGO	Japan Society of Gynecologic Oncology
LMIC	Low- and middle-income country
MDT	Multidisciplinary team
MRI	Magnetic resonance imaging
NCCN	National Comprehensive Cancer Network
OAR	Organ at risk
PET-CT	Positron emission tomography–computed tomography
PMB	Prescribed Minimum Benefits
RT	Radiotherapy
VaIN	Vaginal intraepithelial neoplasia
VTE	Venous thromboembolism

Summary of recommendations

These recommendations provide a concise overview of the GOSK approach to the diagnosis and management of vaginal cancer in Kenya. They are intended to support healthcare providers involved in the care of patients with suspected or confirmed vaginal cancer across different levels of the healthcare system. The recommendations cover clinical evaluation and diagnosis, staging, treatment, post-treatment surveillance, management of recurrent disease, and multidisciplinary care. Detailed recommendations and supporting evidence are provided in Sections 6 and 7.

Table 1. Summary of GOSK recommendations for vaginal cancer

Domain	GOSK recommendations
Clinical evaluation and diagnostic workup	A comprehensive history and thorough general and pelvic examination should be performed in all patients with suspected vaginal cancer.
Clinical presentation and risk assessment	Early-stage vaginal cancer is frequently asymptomatic. A high index of suspicion should be maintained in patients with risk factors such as persistent HPV infection, previous CIN, VaIN, or cervical cancer, immunosuppression, smoking, previous pelvic radiation, chronic vaginal inflammation, advanced age, and obesity.
Clinical presentation	Patients with early disease may present with abnormal vaginal bleeding, abnormal vaginal discharge, or pelvic discomfort. Locally advanced disease may present with a vaginal mass, foul-smelling discharge, groin swelling, hematuria, tenesmus, rectal bleeding, or symptoms suggestive of fistula formation. Metastatic disease may present with anorexia, weight loss, persistent cough, or other site-specific symptoms.
Pelvic examination	A complete pelvic examination should include inspection of the vulva, vagina, and cervix; speculum examination; bimanual examination; and digital rectal examination. Assessment should document the extent of vaginal disease and evaluate for involvement of adjacent structures or organs.
Assessment of the cervix and vulva	Clinical evaluation should include appropriate assessment of the cervix and vulva to exclude a primary or synchronous malignancy. Cervical cytology, colposcopy, and vulvar assessment should be performed when clinically indicated.
Inguinal lymph nodes	Palpable or clinically suspicious inguinal lymph nodes should be appropriately investigated, including biopsy where clinically indicated.
Assessment of adjacent organs	Cystoscopy and proctoscopy should be performed when clinically indicated, particularly in patients with urinary or gastrointestinal symptoms or suspected involvement of adjacent organs.
Histological diagnosis	A definitive diagnosis of vaginal cancer should be established by histopathological examination of an appropriate biopsy specimen.
Biopsy	An appropriate biopsy should be obtained to establish the histological diagnosis. The use of examination under anesthesia (EUA) or examination without anesthesia (EWA) should be determined according to lesion characteristics, patient tolerance, extent of disease, and clinical circumstances.
Endometrial assessment	Endometrial sampling should be considered in patients with abnormal uterine bleeding when clinically indicated.
Immunohistochemistry	Immunohistochemistry should be performed when indicated to support histopathological classification and diagnosis.
Molecular and biomarker testing	Additional molecular and biomarker testing may be considered in recurrent, advanced, or metastatic disease and in selected rare histological subtypes where results may inform systemic, targeted, or immunotherapy selection. Testing should be guided by histological subtype, treatment options, and local availability.
Imaging	Pelvic MRI should be considered the preferred imaging modality for assessment of the primary tumor and adjacent pelvic structures. Chest CT or chest radiography may be used to assess for pulmonary disease. Contrast-enhanced CT or PET-CT may be considered according to clinical indication and resource availability.
Laboratory investigations	Baseline laboratory investigations should include complete blood count, renal function tests, and liver function tests. HPV testing, HIV testing, and quantitative β-hCG should be performed when clinically indicated.

β-hCG: beta human chorionic gonadotropin; CBC: complete blood count; CIN: cervical intraepithelial neoplasia CT: computed tomography; EUA: examination under anaesthesia; EWA: examination without anaesthesia; HER2: human epidermal growth factor receptor 2; HIV: human immunodeficiency virus; HPV: human papillomavirus; LFT: liver function tests; MRI: magnetic resonance imaging; MSI: microsatellite instability; NTRK: neurotrophic tyrosine receptor kinase; PD-L1: programmed cell-

Domain	GOSK recommendations
death ligand 1; PET-CT: positron emission tomography-computed tomography; RET: rearranged during transfection; RFT: renal function test; TMB: tumor mutational burden; VaIN; vaginal intraepithelial neoplasia.	

Table 2. Summary of GOSK recommendations for staging and treatment of vaginal cancer

Component	GOSK recommendations
Staging	Vaginal cancer should be staged according to the International Federation of Gynecology and Obstetrics (FIGO) staging system, based on clinical examination and appropriate investigations, including imaging and assessment of adjacent organ involvement.
Treatment planning	Treatment should be individualized according to tumor location and size, histological subtype, disease stage, performance status, comorbidities, fertility considerations, patient preferences, treatment goals, and available treatment modalities.
Primary treatment	Concurrent chemoradiation using external beam radiotherapy and brachytherapy, with or without platinum-based chemotherapy, is a principal treatment approach for vaginal cancer, with treatment individualized according to disease stage and clinical circumstances.
Verrucous histological subtype	The use of radiotherapy in patients with verrucous carcinoma should be determined according to the histological characteristics of the tumor and the multidisciplinary treatment plan.
Surgical management	Surgical management may be considered in carefully selected patients with stage I–II disease, particularly when complete resection with negative margins is feasible and adjuvant radiotherapy may be avoided. The surgical approach should be individualized according to tumor location, size, extent of disease, and patient factors.
Advanced or metastatic disease	Advanced or metastatic disease should be managed according to disease extent, prior treatment, performance status, comorbidities, treatment goals, and available systemic and local treatment options. Systemic therapy, pelvic radiotherapy for symptom or local disease control, and best supportive and palliative care may be considered as appropriate.
Multidisciplinary care	Multidisciplinary team review is recommended for all patients and is particularly important for non-squamous cell carcinoma and non-adenocarcinoma histological subtypes, advanced disease, and cases requiring complex treatment planning.
EBRT: external beam radiotherapy; FIGO: International Federation of Obstetricians and Gynaecologists	

Table 3. Summary of GOSK recommendations for follow-up and surveillance after treatment for vaginal cancer

Component	GOSK recommendations
Follow-up schedule	Follow-up visits should occur every 3–6 months during the first 2 years, every 6 months during years 3–5, and annually thereafter. Follow-up frequency may be individualized according to disease stage, treatment received, performance status, and risk of recurrence.
Clinical assessment	At each follow-up visit, evaluation should include a symptom review and comprehensive physical examination to assess for recurrence, treatment-related complications, and disease progression.
Post-treatment imaging	Imaging with MRI, contrast-enhanced CT, or PET-CT may be performed within 3–6 months following completion of treatment or earlier when clinically indicated. PET-CT may be considered in selected patients with suspected recurrence.
Cervical and lower genital tract surveillance	Cervical and/or vaginal cytology with HPV testing should be considered according to cervical status, previous cervical neoplasia, prior HPV-associated disease, and other clinical risk factors.
HPV vaccination	HPV vaccination should be offered to eligible patients according to national HPV vaccination recommendations.
Long-term treatment-related toxicities	Long-term treatment-related toxicities should be assessed and managed during follow-up, including sexual dysfunction, vaginal stenosis, bowel dysfunction, urinary complications, lymphedema, and psychosocial effects.
Symptom management	Symptom management should address pain, nausea and vomiting, constipation, fatigue, and other treatment- or disease-related symptoms.
Education on recurrence	Patients should receive education on symptoms that may indicate recurrence, including abnormal vaginal discharge or bleeding, pelvic or lower back pain, a vaginal mass, anorexia, weight loss, persistent cough, hematuria, or rectal bleeding.
Lifestyle and sexual health	Patients should receive counseling on healthy lifestyle behaviors, including physical activity, nutrition, smoking cessation, and weight management. Sexual health should also be addressed, including the appropriate use of vaginal dilators, lubricants, moisturizers, and hormonal therapy where clinically appropriate.

Table 4. Summary of GOSK recommendations for management of recurrent vaginal cancer

Component	GOSK recommendations
Confirmation of recurrence	Recurrent disease should be confirmed histologically where feasible before initiation of treatment.
Clinical assessment	A comprehensive history and thorough general and pelvic examination should be performed. Pelvic examination should include speculum, bimanual, and digital rectal examination to assess the site and extent of recurrence and involvement of adjacent structures.
Assessment of adjacent organs	Cystoscopy and proctoscopy should be performed when clinically indicated, particularly in patients with urinary or gastrointestinal symptoms or suspected involvement of adjacent organs.
Imaging	Imaging should be performed to determine the site and extent of recurrence, assess for distant metastases, and guide treatment planning. MRI, contrast-enhanced CT, or PET-CT may be considered according to clinical indication and resource availability.
Treatment planning	Treatment should be individualized according to previous treatment received, site and extent of recurrence, histological subtype, performance status, comorbidities, patient preferences, treatment goals, and available treatment options.
Management options	Management options may include surgery, systemic therapy, radiotherapy or reirradiation in selected patients, immunotherapy, targeted therapy, and best supportive and palliative care, according to clinical circumstances and treatment availability.
Systemic therapy	Platinum-based combination therapy, including cisplatin or carboplatin with paclitaxel, may be considered as first-line systemic therapy in selected patients with recurrent or metastatic disease. Treatment selection should take into account prior therapy, renal function, performance status, comorbidities, and treatment goals.
Multidisciplinary care	Multidisciplinary team review is recommended for all patients with recurrent disease to guide assessment and selection of local, systemic, supportive, and palliative treatment options.

1.0 Introduction

1.1 Background

Primary cancer of the vagina is rare and constitutes only 1–2% of malignancies of the female genital tract (1). Primary vaginal cancer is strictly defined as a cancer found in the vagina without clinical or histologic evidence of cervical or vulvar cancer, or a prior history of these cancers within five years (2). Historically, vaginal cancers were more common among elderly and postmenopausal women. However, there has been an increase in the diagnosis of vaginal cancer among younger women, particularly in countries with a high prevalence of HIV (1). This has been linked to persistent high-risk HPV infection. Most lesions involving the vagina are metastatic or represent direct extension from other primary malignancies, particularly those of the cervix or vulva, although rare secondary involvement may arise from the endometrium, trophoblast, or ovary (2).

1.2 Epidemiology

Primary vaginal cancer is uncommon. It constitutes approximately 1–2% of malignancies of the female genital tract (1). The incidence of invasive vaginal cancer is approximately 0.42 per 100,000 women and has remained relatively unchanged since the 1980s (1). Only about 1 in every 100,000 women will develop vaginal cancer during her lifetime (2). In the United States, it was estimated that there would be 5,350 new cases of "vaginal and other" rare gynecologic cancers diagnosed in 2019, with 1,430 deaths from these diseases (3). Because these estimates include vaginal cancer together with other rare gynecologic cancers, they should not be interpreted as vaginal cancer-specific estimates. Incidence rates in the United States from 1998 to 2003 were 0.18 per 100,000 women for in situ disease and 0.69 per 100,000 women for invasive disease (3). The incidence of vaginal cancer in sub-Saharan Africa and Kenya has not been documented in the available literature cited in this protocol (3).

1.3 Vaginal Cancer in Kenya

In developing countries such as Kenya, there has been increased documentation of gynecologic cancers. However, this has not necessarily resulted in improved efforts to strengthen screening and scale up cancer care (4). Health system challenges in sub-Saharan Africa are heterogeneous and may cause delays across the cancer care pathway. Patients may present at advanced stages because of limited awareness, cultural stigma surrounding genital diseases, reliance on traditional medicine, and financial barriers to care (5). Unlike cervical cancer, there are no organized screening programs for vaginal cancer. HPV vaccination and prevention strategies may have an important role in reducing the burden of HPV-associated disease; however, vaccination coverage remains an important consideration. These factors may contribute to delayed diagnosis, suboptimal treatment, and poorer outcomes among patients with vaginal cancer.

1.4 Rationale for the GOSK Protocol

In Kenya, the absence of national protocols has led to heterogeneous treatment approaches, resulting in inequities in care. Recognizing this gap, the Gynaecologic Oncology Society of Kenya (GOSK) initiated the development of the first standardized national protocol for vaginal cancer. This was achieved by adapting high-quality international guidelines to the Kenyan context (6–9). The protocol aims to harmonize practice, enhance diagnostic accuracy, optimize treatment outcomes, ensure efficient use of limited resources, and reduce disparities in care across the country.

2.0 Risk factors, Clinical presentation, Histology and staging

2.1 Risk factors

Risk factors for vaginal cancer include persistent high-risk HPV infection, precursor vaginal lesions, previous HPV-associated anogenital disease, immunosuppression, smoking, previous pelvic radiotherapy, and increasing age. Selected risk factors and their clinical relevance are summarized in Table 5.

Table 5. Risk factors for vaginal cancer

Risk factor	Clinical relevance
Persistent HPV infection (especially HPV 16 and 18)	Persistent HPV infection is a major risk factor for vaginal intraepithelial neoplasia (VaIN) and invasive vaginal cancer.
Vaginal intraepithelial neoplasia (VaIN)	Untreated precursor lesions may progress into invasive malignancy.
History of cervical intraepithelial neoplasia (CIN), cervical cancer or vulval cancer	Shared HPV carcinogenic pathways and increased risk of secondary vaginal malignancy
Previous hysterectomy for high-grade cervical intraepithelial neoplasia (CIN) or cervical cancer.	Previous hysterectomy for high-grade cervical intraepithelial neoplasia is associated with persistent HPV infection and thus increased risk of vaginal neoplasia.
Immunosuppression (HIV, immunosuppressive therapy, autoimmune disease requiring treatment.	Impaired HPV clearance due to immunosuppression increases the risk of persistent infection and malignant transformation.
Smoking	Smoking promotes and prolongs HPV persistence and malignant transformation
Chronic vaginal irritation or inflammation	Chronic inflammation from vaginal pessaries, chronic vaginitis, chemical irritation, or birth trauma may lead to carcinogenesis through metaplastic and dysplastic changes.
Previous pelvic radiotherapy	Prior pelvic irradiation is associated with an increased risk of secondary vaginal malignancy.
Advanced age and post-menopausal status	Advanced age is historically associated with an increased risk of vaginal cancer due to systemic cellular immunity decline and epithelial mucosal vulnerability because of epithelial thinning and atrophy.
Obesity	Obesity may contribute indirectly through hormonal and inflammatory mechanisms
HIV: human immunodeficiency virus; HPV: human papillomavirus	

2.2 Clinical presentation

Vaginal cancer may present with nonspecific symptoms, and some patients may be asymptomatic at diagnosis. Common clinical presentations include abnormal vaginal bleeding, abnormal vaginal discharge, pelvic pain or discomfort, urinary or gastrointestinal symptoms, fistula formation, groin swelling, lower-limb swelling, and constitutional symptoms.

Table 6. Clinical presentation of vaginal cancer

Clinical features	Clinical consideration
Abnormal vaginal bleeding	This may present as post coital bleeding, contact, intermenstrual, or postmenopausal bleeding.
Abnormal vaginal discharge	The discharge may be watery, bloody, or foul-smelling.
Pelvic pain or discomfort	This includes pelvic pain, low back pain, dyspareunia, or pressure symptoms.
Urinary/gastrointestinal symptoms	This includes dysuria, haematuria, urinary tract obstruction, tenesmus, melena stools, or rectal bleeding. It may indicate extension to adjacent organs.
Vesicovaginal/Rectovaginal fistulae	In advanced disease, there may be invasion of the bladder and/or rectum.
Groin swelling	Enlarged inguinal-femoral lymph nodes may indicate possible spread of advanced disease.
Lower limb swelling	This may occur due to lymphatic flow obstruction or deep vein thrombosis.
Constitutional symptoms	This includes anorexia, weight loss, fatigue, anaemia-related symptoms, shortness of breath, or a persistent cough.
Asymptomatic disease	Early disease may be incidentally detected.

2.3 Histological subtypes

Squamous cell carcinoma is the predominant histologic subtype of vaginal carcinoma, accounting for approximately 90% of cases, and may be HPV-associated or HPV-independent. Adenocarcinoma accounts for approximately 8–10% of

cases and may be associated with or independent of HPV. Other histologic subtypes are uncommon and include adenosquamous carcinoma, clear cell carcinoma, carcinosarcoma, adenosarcoma, melanoma, verrucous carcinoma, endometrioid carcinoma, mucinous carcinoma, neuroendocrine carcinoma, germ cell tumors, adenoid basal carcinoma, mesonephric adenocarcinoma, and mixed tumors. Accurate histopathologic classification is essential because prognosis and treatment strategies differ according to tumor subtype.

Table 7. Histological subtypes and classification of vaginal cancer

Histological type	**Grading system/Classification**
Squamous cell carcinoma (SCC)	G1: Well differentiated G2: Moderately differentiated G3: Poorly differentiated
Adenocarcinoma	Similar to SCC G1: Well differentiated G2: Moderately differentiated G3: Poorly differentiated
Vaginal melanoma	Breslow thickness (depth of invasion) and ulceration status.
Carcinosarcoma	Based on differentiation, mitotic index, and necrosis. Low-grade: well to moderately differentiated, low mitotic index, and minimal necrosis. High-grade: poorly differentiated, high mitotic index with areas of widespread necrosis.
Verrucous	Typically, well differentiated. Minimal cytologic atypia, abundant keratinization, and pushing rather than infiltrative borders.
Sarcoma	Histology-specific grading depends on subtype. Leiomyosarcoma: grading may incorporate tumor differentiation, mitotic activity, and tumor necrosis (*French Federation of Cancer Centers (FNCLCC)* type principles where applicable) Endometrial stromal sarcoma: classified as low grade or high grade rather than the conventional G1-G3 grading. Rhabdomyosarcoma: classification is based primarily on histological subtype and risk stratification rather than conventional grading.
Neuroendocrine carcinoma	Based on differentiation and proliferation index.
Adenocarcinoma	Classified by the growth pattern. It has two distinct groups: with or without sarcomatous growth
Adenoid basal carcinoma	The two distinct categories are classified as pure or mixed.
G1: grade 1; G2: grade 2; G3: grade 3; FNCLCC: French Federation of Cancer Centres	

2.4 FIGO staging

Vaginal cancer is primarily staged clinically based on the findings of the physical examination and diagnostic evaluation, including biopsy and appropriate imaging, as shown in Table 8.

Table 8. FIGO staging for vaginal cancer

Stage	**Definition**
Stage I	The carcinoma is limited to the vaginal wall.
IA	Tumor measures < 2cm.
IB	Tumor measures ≥ 2cm.
Stage II	The carcinoma has extended to the sub-vaginal tissue but has not reached the pelvic sidewall.
IIA	Tumor invades paravaginal tissues but not the pelvic sidewall, measuring < 2cm.
IIB	Tumor invades paravaginal tissues but not the pelvic sidewall, measuring ≥ 2 cm
Stage III	The tumor of any size has extended to the pelvic sidewall and/or causing hydronephrosis or a non-functioning kidney.
Stage IV	The carcinoma has extended beyond the true pelvis or involves the mucosa of the bladder or rectum, not including bullous edema.
IVA	The carcinoma involves the bladder or rectal mucosa.
IVB	Distant metastases.
FIGO: International Federation of Gynecology and Obstetrics	

3.0 Objectives

3.1 Broad objective

To establish a standardized, evidence-based approach to the management of vaginal cancer in Kenya.

3.2 Specific objectives

This management protocol for vaginal cancer provides recommendations and guidance on:

1. Diagnostic evaluation.
2. Management according to disease stage.
3. Special considerations for specific histological subtypes.
4. Post-treatment surveillance strategies.
5. Supportive and palliative care.
6. Management of recurrent disease.

4.0 Clinician responsibility

This protocol represents the evidence-based consensus of the multidisciplinary development group under the Gynaecologic Oncology Society of Kenya (GOSK) for the management of patients with vaginal cancer. It is intended to provide guidance to gynecologic oncologists, radiation and medical oncologists, pathologists, radiologists, general gynecologists, primary care physicians, gynecologic oncology nurses, onco-pharmacists, public health specialists, palliative care and allied health teams, health administrators, and policymakers. However, application of these recommendations should always be informed by independent clinical judgment, considering each patient's individual circumstances.

5.0 Methods

5.1 Guideline Adaptation Approach

This protocol was developed through a guideline adaptation approach, drawing on existing clinical practice guidelines and tailoring their recommendations to Kenya's health system and resource context. The adaptation process included systematic identification and appraisal of relevant guidelines, comparative review of their recommendations, and contextualization of recommendations to the Kenyan healthcare setting.

5.2 Development Panel

A multidisciplinary protocol development panel was convened, comprising gynecologic oncologists, pathologists, radiologists, gynecologic oncology nurses, onco-pharmacists, radiation oncologists, public health specialists, and patient representatives. The panel received technical orientation from experts at the University of Nairobi and Kenyatta National Hospital on the principles of evidence-based guideline adaptation. The training emphasized the use of standardized appraisal tools, systematic methods for evaluating published guidelines and protocols, and approaches for contextualizing recommendations to local realities. This process was intended to support alignment with internationally accepted standards while addressing the specific challenges of Kenya's healthcare setting.

5.3 Search Strategy

A comprehensive search was conducted in PubMed and Google Scholar to identify relevant evidence-based guidelines, systematic reviews, and best-practice statements on the management of vaginal cancer. Search terms included "vaginal cancer," "clinical guideline," "gynecologic oncology," "protocols," and "guidelines."

5.4 Source Guideline Identification

Four primary reference guidelines were identified for consideration:

1. National Comprehensive Cancer Network (NCCN) Clinical Practice Guidelines in Oncology: Vaginal Cancer, 2024.
2. ESTRO-ESGO-SIOPe Guidelines for the Management of Patients with Vaginal Cancer, 2023.
3. Japan Society of Gynaecologic Oncology (JSGO) Guidelines for the Treatment of Vulvar Cancer and Vaginal Cancer, 2015.
4. Council for Medical Schemes, South Africa (CMS-SA) Final PMB Definition Guidelines for Vaginal and Vulvar Cancer, excluding Vulvar or Vaginal Melanoma, 2019.

Table 9. Summary of retrieved guidelines

	Title	Type	Publisher	Year
1	NCCN Clinical Practice Guidelines in Oncology: Vaginal Cancer	Clinical Guideline	National Comprehensive Cancer Network (NCCN)	2024
2	ESTRO-ESGO-SIOPe Guidelines for the Management of Patients with Vaginal Cancer	Clinical Guideline	European Society of Gynaecological Oncology (ESGO)	2023
3	Japan Society of Gynaecology Oncology guidelines 2015 for the Treatment of Vulvar Cancer and Vaginal Cancer	Clinical Guideline	Japan Society of Gynaecology Oncology (JSG)	2015
4	Final PMB Definition Guidelines for Vaginal and Vulvar Cancer, excluding Vulvar or Vaginal Melanoma	Clinical Guideline	Council For Medical Schemes, South Africa (CMS-SA)	2019

5.5 Eligibility and Selection

Retrieved guidance documents were considered for their relevance to vaginal cancer management and their suitability for adaptation to the Kenyan healthcare setting. Consideration included the scope of the guideline, its applicability to clinical management, methodological quality, and relevance to the Kenyan healthcare and resource context. Guidelines that provided relevant clinical management recommendations were taken forward for formal appraisal using the AGREE II instrument.

5.6 AGREE II Appraisal

The identified guidelines were independently appraised by two trained panelists using the Appraisal of Guidelines for Research and Evaluation II (AGREE II) instrument. Where the two reviewers did not reach agreement, a facilitator was designated to resolve the discrepancy and reach a final agreement.

AGREE II assesses guideline quality across six domains:

1. Scope and purpose
2. Stakeholder involvement
3. Rigor of development
4. Clarity of presentation
5. Applicability
6. Editorial independence

Each item was scored using the AGREE II 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Domain scores were converted to standardized percentages using the AGREE II scoring formula:

Standardized domain score (%) = (obtained score − minimum possible score) ÷ (maximum possible score − minimum possible score) × 100.

5.7 Guideline Selection

Overall quality ratings and recommendations for use in Kenya were recorded following AGREE II appraisal. Although all six AGREE II domains were assessed, particular emphasis was placed on rigor of development (Domain 3) and clarity of presentation (Domain 4) to assess methodological robustness. Guidelines scoring below 75% in Domain 3 or below 60% in Domain 4 were excluded from further consideration. Based on these criteria, three guidelines met the minimum threshold for inclusion. The CMS-SA guideline was included with modification despite a Domain 3 score of 46%, as it was the sole African reference guideline and was considered relevant to the contextual analysis of vaginal cancer management in low- and middle-income settings. Four guidelines (NCCN, ESGO, JSGO, and CMS-SA) were therefore selected for inclusion in the analysis and adaptation of recommendations.

Table 10. Summary of AGREE II domain scores

	Guideline	D1	D2	D3	D4	D5	D6	Decision
1	NCCN	100%	69%	100%	100%	56%	92%	Included
2	ESGO	100%	69%	90%	100%	52%	50%	Included
3	JSGO	100%	69%	96%	100%	58%	21%	Included
4	CMS-SA	100%	69%	46%	83%	40%	8%	Included with modification

D1–D6: AGREE II Domains 1–6. Three guidelines met the minimum threshold criteria, and one was included with modification. NCCN: National Comprehensive Cancer Network; ESGO: European Society of Gynaecological Oncology; JSGO: Japan Society of Gynaecology Oncology; CMS-SA: Council for Medical Schemes, South Africa.

5.8 Adaptation and Contextualization

Recommendations from the selected source guidelines were systematically reviewed across the principal clinical domains of vaginal cancer management. Areas of agreement and variation between the guidelines were identified during the evidence review. The recommendations were then considered in relation to the Kenyan healthcare setting, including the availability of diagnostic services, pathology, surgery, radiotherapy, systemic treatment, and supportive and palliative care. Where recommendations differed between source guidelines, the available supporting evidence, clinical relevance, and feasibility within the Kenyan context were considered in formulating the corresponding GOSK recommendations.

5.9 Development of GOSK Recommendations

The final GOSK recommendations were developed by synthesizing relevant recommendations from the selected source guidelines and contextualizing them for vaginal cancer care in Kenya. The recommendations were organized according to the clinical pathway, covering diagnostic evaluation, histopathological assessment, staging, primary treatment, management of recurrent and advanced disease, surveillance, and supportive and palliative care.

6.0 Review of Evidence

This section summarizes the evidence synthesis from the four selected guidelines: NCCN (2024), ESGO (2023), JSGO (2015), and CMS-SA (2019). The recommendations from the selected guidelines were compared across key clinical domains, including diagnostic evaluation, stage-specific management, histological subtypes, post-treatment surveillance, supportive and palliative care, and management of recurrent disease.

6.1 Diagnostic evaluation

Table 11. Comparative summary of evidence from source guidelines for diagnostic considerations for vaginal cancer

Diagnostic Aspect	NCCN	ESGO	JSGO	CMS-SA
Initial evaluation	A comprehensive history, including a complete physical exam that includes a bimanual and rectovaginal exam. Assessment of the cervix and vulva should be included. Assess risk factors.	A thorough pelvic and vaginal exam should be performed	The diagnostic aspect was not mentioned.	A comprehensive history and thorough physical exam.
Biopsy	The biopsy may be collected through: Colposcopy, EUA, and/or Cystoscopy/proctoscopy if clinically indicated	The biopsy may be collected through: colposcopy, or EUA	The diagnostic aspect was not mentioned.	The biopsy may be collected through: EUA- +biopsy of cervix, and/or Cystoscopy/ proctoscopy
Additional diagnostic evaluation	Other additional tests may include: PAP smear, p16 or RNA in situ hybridization, p53, PDL1 in recurrent/progressive/ metastatic disease, HER2 for equivocal IHC in advanced, recurrent, or metastatic cancer, Comprehensive molecular profiling – MSI, TMB, NTRK, and RET may be considered for rare pan-tumor targeted therapy.	The diagnostic aspect was not mentioned.	The diagnostic aspect was not mentioned.	The diagnostic aspect was not mentioned.
Imaging for disease staging	The preferred imaging modality is an MRI of the abdomen and pelvis and CT chest or PET-CT.	An expert pelvic ultrasound is performed OR MRI of the pelvis.	The diagnostic aspect was not mentioned.	Imaging is done when the diagnosis is confirmed. A CT of the chest/abdomen/pelvis OR PET-CT OR MRI pelvis OR Ultrasound of the abdomen and pelvis (TVUS). A CXR is an alternative in resource-limited settings.
Multi-disciplinary review	The diagnostic aspect was not mentioned.	The diagnostic aspect was not mentioned.	The diagnostic aspect was not mentioned.	The diagnostic aspect was not mentioned.

CT: computed tomography; CXR: chest x-ray; EUA: examination under anaesthesia; FDG-PET-CT: fluorodeoxyglucose-positron emission tomography-computed tomography; HER2: human epidermal growth factor receptor 2; IHC: immunohistochemistry; MRI: magnetic resonance imaging; MSI: microsatellite instability; NTRK: neurotrophic tyrosine receptor kinase; p16: protein16; p53: protein 53; PAP: papanicolaou smear; PD-L1: programmed cell- death ligand 1; PET-CT: positron emission tomography-computed tomography; RNA: ribonucleic acid; RET: rearranged during transfection; TVUS: transvaginal ultrasound.

6.2 Stage-specific management

Table 12. Comparative summary of evidence from source guidelines for management of stage I vaginal cancer by radiotherapy

Stage I disease can be managed by radiotherapy or by surgery in select cases.				
	NCCN	**ESGO**	**JSGO**	**CMS-SA**
Management of stage I vaginal cancer by radiotherapy	Intracavitary brachytherapy alone (if the lesion is ≤2cm with a thickness of ≤5mm. Or EBRT + intracavitary brachytherapy +/- (interstitial brachytherapy if the residual tumor is >5mm) +/- (concurrent platinum- containing chemotherapy).	EBRT + BT	If the tumor depth is ≤5mm; EBRT + BT Or BT If the tumor depth ≥5mm; EBRT +BT (concurrent platinum-containing chemotherapy).	EBRT (if the tumor is poorly differentiated/ deeply invasive)
BT: brachytherapy; cm: centimeters; EBRT: external beam radiotherapy; mm: millimeters.				

Table 13. Comparative summary of evidence from source guidelines for surgical management of stage I vaginal cancer

Select cases of stage I cancer of the vagina can be surgically managed as shown in the Table.				
	NCCN	**ESGO**	**JSGO**	**CMS-SA**
Surgical management of stage I vaginal cancer	Perform a surgical resection (+/- pelvic LND) for lesions in the upper 2/3 of the vagina. For lesions in the lower 1/3 of the vagina, perform a surgical resection + inguinal LND.	Wide excision (if the lesion ≤2 cm). Or hysterectomy + partial colpectomy + pelvic LND (for upper 2/3 vaginal lesions) or inguinal LND (for lower 1/3 lesions)	Radical hysterectomy + pelvic LND + vaginectomy.	Wide local excision. Or radical vaginectomy +/- pelvic LND. or Radical hysterectomy + upper vagina colpectomy + PLND
cm: centimeters; LND: lymph node dissection.				

Table 14. Comparative summary of evidence from source guidelines for management of stage II vaginal cancer

Radiotherapy remains the mainstay of management for stage II disease, though surgery can be utilized in select cases.					
		NCCN	**ESGO**	**JSGO**	**CMS-SA**
Treatment modality	**Radiotherapy**	CCRT + BT or EBRT +BT	CCRT +BT	EBRT +BT or EBRT	EBRT or CCRT
	Surgical	Surgical modality is not mentioned.	Surgical modality is not mentioned.	Radical hysterectomy +pelvic LND + vaginectomy	Partial/ radical vaginectomy + adjuvant EBRT
BT: brachytherapy; CCRT: concurrent chemoradiation; EBRT: external beam radiotherapy; LND: lymph node dissection.					

Table 15. Comparative summary of evidence from source guidelines for management of stage III vaginal cancer

		NCCN	**ESGO**	**JSGO**	**CMS-SA**
Treatment modality	**Radiotherapy**	CCRT + BT or EBRT +BT	CCRT +BT	EBRT +BT or EBRT or CCRT	EBRT or CCRT
	Surgical	Surgical treatment is not mentioned.	Surgical treatment is not mentioned.	Surgical treatment is not mentioned.	Pelvic exenteration + adjuvant EBRT
BT: brachytherapy; CCRT: concurrent chemoradiation; EBRT: external beam radiotherapy.					

Table 16. Comparative summary of evidence from source guidelines for management of stage IV vaginal cancer

		NCCN	**ESGO**	**JSGO**	**CMS-SA**
Treatment modality	**Radiotherapy**	CCRT + BT or	CCRT +BT	EBRT +BT or EBRT	EBRT (adjuvant)

		NCCN	ESGO	JSGO	CMS-SA
		EBRT +BT		or CCRT	
	Surgical	Surgical treatment is not mentioned.	Surgical treatment is not mentioned.	Pelvic exenteration.	Pelvic exenteration (if RT is not available).
	Systemic Therapy	Systemic therapy is not mentioned.	Systemic therapy is not mentioned.	Systemic therapy is considered.	Systemic therapy that may include; Cisplatin Carboplatin Paclitaxel 5-FU

BT: brachytherapy; CCRT: concurrent chemoradiation; EBRT: external beam radiotherapy; 5-FU: 5-fluorouracil; RT: radiotherapy.

6.3 Management according to histological type

Table 17. Comparative summary of evidence from source guidelines for management of the vagina cancer according to histological type

	NCCN	ESGO	JSGO	CMS-SA
Squamous cell carcinoma (SCC)	Management is guided by stage of disease.	Management is guided by stage of disease.	Management is guided by stage of disease.	Management is guided by stage of disease.
Adenocarcinoma	The management is similar to SCC.	The management is similar to SCC.	The management is similar to SCC.	The histological subtype is not mentioned.
Melanoma	The histological subtype is not mentioned.	A surgical MDT is mandatory.	Perform a wide local excision. or Radical vaginectomy/pelvic exenteration +/- pelvic/inguinal LND.	The histological subtype is not mentioned.
Sarcoma	The histological subtype is not mentioned.	Surgical MDT is mandatory.	The histological subtype is not mentioned.	The histological subtype is not mentioned.
Verrucous carcinoma	The histological subtype is not mentioned.	The histological subtype is not mentioned.	The histologic subtype is not mentioned.	The histological subtype is not mentioned.

LND: lymph node dissection; MDT: multidisciplinary team.

6.4 Post-treatment surveillance

Table 18. Comparative summary of evidence from source guidelines for post-treatment surveillance for vaginal cancer

	NCCN	ESGO	JSGO	CMS-SA
Timeline	Follow-up visits should occur every 3- 6 months for the first 2 years, every 6 months for the next 3-5 years, then annually thereafter.	Follow-up visits should occur every 3- 4 months for the first 2 years, then 6 monthly for the next 3-5 years.	Follow-up visits should occur every 3 months for the first 2 years, every 6 months for the next 3-5 years, then annually thereafter.	Follow-up visits should occur every 3 months for the first year, every 4 months for the second year, every 6 months for the next 3-5 years, then annually for 10 years.
Workup	A comprehensive history and thorough physical exam. Perform a PET-CT three months after RT. Screening includes cervical/vaginal	A comprehensive history and thorough physical exam. Similar imaging at baseline after 3 months of primary treatment. Screening includes	A comprehensive history and thorough physical exam. Surveillance imaging includes CT/MRI/PET-CT or a CXR. Screening includes cervical and vaginal cytology.	A comprehensive history and physical exam. Perform imaging and lab work if recurrence is suspected.

	NCCN	ESGO	JSGO	CMS-SA
	cytology (+HPV testing). Baseline laboratory investigations (CBC/RFTs/LFTs) may be included if necessary. Ensure the patient is educated about the symptoms of recurrence and general health. Long-term side effects of treatment must be managed. Additional investigations will depend on signs, symptoms, and other clinical findings.	cervical/vaginal HPV (cytology not sensitive after RT). Patient education and counseling.	Perform a biopsy if needed. Tumor markers may be included as part of additional testing.	Perform a biopsy only if there is recurrence.

CBC: complete blood count; CT: computed tomography; CXR: chest x-ray; HPV: human papillomavirus; LFT: liver function test; MRI: magnetic resonance imaging; PET-CT: positron emission tomography-computed tomography; RFTs: renal function tests; RT: radiotherapy.

6.5 Supportive and palliative care

Table 19. Comparative summary of evidence from source guidelines for supportive and palliative care for vaginal cancer

	NCCN	ESGO	JSGO	CMS-SA
Supportive and palliative care	Education on the physical impact of acute, short, and long-term effects of all treatments. Psychological counseling. Regular medical care to manage chronic diseases. Vaccination. Sexual therapy. Communication and coordination between all clinicians.	Patient education and support. Cancer rehabilitation-sex therapy, psychologist, dietician, physiotherapy. Assess long-term toxicities. Follow up by specialists in cases of auxiliary treatment.	The recommendation is not mentioned.	Give best supportive care, which includes stoma care, nutrition, and pain management.

6.6 Management of recurrent vaginal cancer

Table 20. Comparative summary of evidence from source guidelines management of recurrent vaginal cancer

	NCCN	ESGO	JSGO	CMS-SA
Treatment with prior radiotherapy	For central disease- pelvic exenteration +/- IORT or Local excision or Reirradiation in select patients. For non-central disease- systemic therapy or Resection or Reirradiation or BSC. If only intracavitary BT, Individualized EBRT +/- systemic therapy +/-interstitial brachytherapy +/-surgery for select patients.	Pelvic exenteration (central disease) or systemic chemotherapy.	Systemic chemotherapy or immunotherapy.	Pelvic exenteration or Systemic chemotherapy.
Treatment without prior radiotherapy	EBRT +/- BT or CCRT +/- BT or EBRT +/- Interstitial Brachytherapy +/- Surgery (if only BT) or Systemic therapy.	EBRT +/- BT or CCRT +/- BT	CCRT +/- BT	EBRT or CCRT

	NCCN	ESGO	JSGO	CMS-SA
BSC: best supportive care; BT: brachytherapy; CCRT: concurrent chemoradiation; EBRT: external beam radiotherapy; IORT: intraoperative radiation therapy.				

7.0 GOSK recommendations for the management of vaginal cancer in Kenya

7.1 Clinical evaluation and diagnostic workup

Table 21. GOSK recommendations on clinical evaluation and diagnostic workup for vaginal cancer

Diagnostic aspect	GOSK recommendations
Clinical evaluation and diagnostic workup	A comprehensive history and thorough general and pelvic examination should be performed in all patients with suspected vaginal cancer. Early-stage vaginal cancer is frequently asymptomatic or may present with persistent abnormal vaginal bleeding, including postcoital bleeding, contact bleeding, intermenstrual bleeding, or postmenopausal bleeding. Other early symptoms include abnormal vaginal discharge, pelvic discomfort, or dyspareunia. Disease with local extension may present with a vaginal mass, dysuria, urinary frequency, haematuria, constipation, rectal bleeding, tenesmus, pelvic pain, lower back pain, groin swelling, lower limb oedema, urinary obstruction, or symptoms suggestive of local invasion. Metastatic or end-stage disease may present with foul-smelling discharge, vesicovaginal or rectovaginal fistulae, anorexia, weight loss, fatigue, persistent cough, reduced performance status, and symptoms related to metastatic spread. Assessment should include symptom duration, bleeding pattern, pain, urinary and gastrointestinal symptoms, constitutional symptoms, previous lower genital tract neoplasia, HPV status, HIV status, smoking history, and prior pelvic irradiation. A high index of suspicion should be maintained in women with persistent unexplained vaginal bleeding, abnormal discharge, pelvic symptoms, or vaginal lesions, particularly in the presence of HPV infection, HIV infection, prior cervical neoplasia, smoking history, or previous pelvic irradiation. A complete pelvic examination without anaesthesia (EWA) should include inspection of the vulva, vagina, and cervix; speculum examination; bimanual examination; and digital rectal examination to evaluate tumor extent and involvement of adjacent structures. Examination findings should document tumor size, location within the vagina, circumferential involvement, depth of invasion where assessable, parametrial involvement, extension to adjacent organs, and presence of inguinal lymphadenopathy. Evaluation should actively exclude synchronous or metastatic disease arising from cervical, vulval, endometrial, colorectal, anorectal, or bladder malignancies. Examination under anaesthesia (EUA) should be considered when pain, anatomical distortion, vaginal stenosis, or tumor extent limit adequate office examination.
Biopsy	EWA /EUA + biopsy of suspicious areas. Patients without visible vaginal lesions and early-stage disease (stage I-II) should undergo a punch biopsy with EUA. Patients with visible lesions and advanced-stage disease should undergo a punch biopsy without anaesthesia. (Necrotic tissue should be avoided during the biopsy to improve diagnostic yield.) Palpable inguinal lymph nodes should be biopsied using fine needle aspiration (FNA), core needle biopsy, or surgical excision. Colposcopy/Vaginoscopy/Vulvoscopy + punch biopsy of suspicious areas should be performed as part of the assessment of the cervix, vagina, and vulva. Cystoscopy/proctoscopy is performed if indicated.
	Additional diagnostic evaluation should include cervical cancer screening to exclude synchronous cervical pathology or an alternative primary site. Endometrial sampling should be considered in patients presenting with abnormal uterine bleeding to exclude endometrial pathology. Baseline laboratory investigations should include a complete blood count, renal function tests, and liver function tests. Additional investigations, such as HPV testing, diagnostic HIV testing, and quantitative βhCG, should be guided by the clinical presentation and planned treatment modality.
Imaging for disease staging	Imaging for diagnostic workup should be performed in all patients with histologically confirmed cancer of the vagina to determine tumor extent, assess nodal involvement, identify metastases, and guide staging and treatment planning. Pelvic MRI is the preferred modality for local tumor assessment and evaluation of adjacent organ involvement. Where MRI is unavailable, contrast-enhanced CT of the abdomen and pelvis should be considered as an alternative for staging and treatment planning. Chest CT should be performed to assess pulmonary metastases. PET-CT may be considered, where available, for assessing nodal disease, distant metastases, or recurrent disease, or for treatment planning. In resource-limited settings, a chest X-ray may be used as an alternative to chest CT where clinically appropriate. Additional imaging, including abdominal-pelvic CT or ultrasound, may be considered based on clinical findings, disease extent, and local resource availability.

Diagnostic aspect	GOSK recommendations
Multidisciplinary review	MDT discussion is recommended for uncommon histological subtypes, locally advanced or metastatic disease, recurrent disease, diagnostic uncertainty, and cases requiring complex or multimodal treatment planning.
βhCG: beta human chorionic gonadotropin; CT: computed tomography; EUA: examination under anaesthesia; EWA: examination without anaesthesia; HIV: human immunodeficiency virus; HPV: human papillomavirus; MDT: multidisciplinary team; MRI: magnetic resonance imaging; PET-CT: positron emission tomography-computed tomography.	

7.2 Stage-based management

Table 22. GOSK recommendations on the management of vaginal cancer according to FIGO stage

FIGO stage	GOSK recommendations
Stage I	EBRT with brachytherapy, with or without concurrent platinum-based chemotherapy, is recommended for most patients. Surgical management may be considered for carefully selected patients with small lesions in whom complete resection with negative margins is feasible and adjuvant radiotherapy is unlikely to be required.
Stage II	EBRT with brachytherapy, with or without concurrent platinum-based chemotherapy, is recommended. Surgery should generally be limited to selected cases as part of individualized treatment planning.
Stage III	EBRT with brachytherapy, with or without concurrent platinum-based chemotherapy, is recommended as standard treatment. Regional nodal disease should be assessed and incorporated into treatment planning.
Stage IVA	Management should be individualized and may include definitive chemoradiotherapy, pelvic exenteration in highly selected patients, systemic therapy, or palliative approaches depending on disease extent and performance status.
Stage IVB	Treatment is primarily palliative and may include systemic therapy, immunotherapy, targeted therapy where indicated, palliative radiotherapy, symptom-directed interventions, and best supportive care.
All stages	Multidisciplinary team review is recommended for complex cases and mandatory for recurrent disease, uncommon histological subtypes, metastatic disease, and cases requiring multimodal treatment planning.
EBRT: external beam radiotherapy; FIGO: International Federation of Gynaecology and Obstetrics. *See radiation doses in the appendix.*	

7.3 Fertility preservation and ovarian function

Table 23. GOSK recommendations on fertility preservation and ovarian function in vaginal cancer

Component	GOSK recommendations
Fertility preservation counseling	Fertility preservation counselling should be offered as early as possible following diagnosis and prior to initiation of surgery, chemotherapy, or radiotherapy in premenopausal women with early-stage or selected locally advanced vaginal cancer where future fertility is desired and preservation is oncologically feasible. Patients should receive counselling regarding the potential effects of treatment on fertility, ovarian function, premature menopause, sexual health, and future reproductive options.
Eligibility considerations	Fertility preservation interventions should be considered in premenopausal women desiring future fertility, particularly those with early-stage disease, anticipated long-term survival, adequate ovarian reserve, and treatment plans that allow preservation without compromising oncological outcomes.
Multidisciplinary team review	Multidisciplinary team review, including input from gynaecologic oncology, reproductive medicine/fertility specialists, radiation oncology, and where appropriate psychosocial support services, is recommended prior to implementation of fertility preservation strategies.
Ovarian preservation	Ovarian transposition, ovarian preservation, or cryopreservation should be considered before pelvic radiotherapy, where clinically appropriate. Potential benefits, limitations, and risks should be discussed with patients.
In premenopausal women and those requiring fertility sparing, cryopreservation, ovarian preservation, or ovarian transposition should be considered before starting radiotherapy. *Counseling on adoption, surrogacy, and IVF must be included in the pretreatment plan.*	

7.4 Surgical management

Surgery may be considered in carefully selected patients and is recommended only if a complete resection with clear margins (≥1 cm histological margin) is feasible and the likelihood of not requiring adjuvant therapy is high. Open surgery remains the main surgical approach. The surgical management according to stage is outlined in the table.

Table 24. GOSK recommendations on surgical management of vaginal cancer according to FIGO stage

Stage	GOSK recommendations
I	Wide excision (for lesions ≤2 cm in the lower 1/3 of the vagina). If the uterus is in situ; Radical hysterectomy + partial vaginectomy + pelvic LND (for upper 2/3 lesions) or inguinal LND (for lower 1/3 lesions). If the uterus is not in situ; Partial vaginectomy +/- pelvic LND (for upper 2/3 lesions) or inguinal LND (for lower 1/3 lesions).
II	If the uterus is in situ; Radical hysterectomy + partial vaginectomy + pelvic LND (for upper 2/3 lesions) or inguinal LND (for lower 1/3 lesions). If the uterus is not in situ; Partial vaginectomy +/- pelvic LND (for upper 2/3 lesions) or inguinal LND (for lower 1/3 lesions).
III/IV	Surgery is not recommended.
LND: lymph node dissection.	

7.5 Adjuvant treatment after surgery

Table 25. GOSK recommendations on indications for adjuvant treatment following surgery

Indication	GOSK recommendations
Negative histological margins (margins ≥ 1cm) with negative LN	No adjuvant therapy is needed for stage I disease. Adjuvant radiotherapy will be required for stage II disease.
Positive histological margins or less than 1cm histological margin with negative LN	EBRT +/- BT (concurrent platinum-containing chemotherapy) 4-6 weeks after surgery is preferred or Surgical re-excision if anatomically feasible.
Positive pelvic lymph nodes or inguinofemoral nodes and/or Positive/close histological margins and positive pelvic/inguinal LN.	EBRT + BT (concurrent platinum-containing chemotherapy) 4-6 weeks after surgery.
For patients unable to tolerate radiotherapy or not amenable to surgical re-excision.	Systemic therapy is administered with any of the following regimens; • IV cisplatin 50 mg/m^2 + IV paclitaxel (135-175 mg/m^2) or • IV carboplatin (4-5 AUC) + IV paclitaxel (135-175 mg/m^2) or • IV cisplatin 50 mg/m² or IV carboplatin (4–5 AUC) + IV paclitaxel (135 –175 mg/m²) + IV bevacizumab (10–15 mg/kg).
AUC: area under the curve; BT: brachytherapy; EBRT: external beam radiotherapy; LN: lymph nodes.	

7.6 Management according to histological type

Table 26. GOSK recommendation on management of vaginal cancer according to histological type

Histological subtype	GOSK recommendations
Squamous cell carcinoma	Management should follow stage-based recommendations, with concurrent chemoradiotherapy remaining the preferred treatment modality for most patients. Surgical management may be considered for selected cases of stage I-II disease. Adjuvant treatment should be guided by stage, nodal status, margin status, and treatment response.
Adenocarcinoma	Management is generally similar to SCC and should be individualized according to stage and disease extent. Surgery may have a greater role in stage I and II disease as it has a moderate response to radiotherapy. Adjuvant treatment should be guided by histological subtype, i.e. whether HPV-associated, endometrioid carcinoma, or clear cell, and their risk of recurrence. The clear cell subtype has the greatest risk of recurrence. Positive margins can be re-excised or undergo CCRT + BT with an external-beam boost. An MDT discussion is recommended.
Melanoma	Surgical excision with negative margins is preferred where feasible, as melanomas are radioresistant. Wide local excision for tumors ≤ 2cm, radical hysterectomy and partial vaginectomy for small proximal tumors, or radical surgery may be considered if the tumor is extensive, though this is associated with significant morbidity. Immunotherapy, targeted therapy, and/or radiotherapy may be considered based on the molecular profile (e.g., PD-1, CTLA-4, LAG3), recurrence risk, and disease stage.

Histological subtype	GOSK recommendations
	MDT review is mandatory.
Sarcoma	Management should be individualized based on histological subtype, tumor grade, and stage. Surgery remains the preferred treatment where complete resection is achievable. Adjuvant radiotherapy, chemotherapy, or hormonal therapy may be considered depending on the subtype; ● Endometrial stromal sarcoma (ESS): low-grade ESS typically has a good response to hormonal therapy, while high-grade ESS is managed with RT or systemic chemotherapy. ● Leiomyosarcoma: adjuvant RT may be considered, though it is moderately radiosensitive. Advanced disease is managed with systemic chemotherapy including doxorubicin, ifosfamide, or gemcitabine + docetaxel. ● Rhabdomyosarcoma: it is more common in children and is managed by systemic chemotherapy that includes vincristine + actinomycin D + cyclophosphamide.
Verrucous carcinoma	Surgical excision with negative margins is the preferred treatment modality. Wide local excision or vaginectomy may be considered for stage I and II disease. Re-excision may be required for positive margins or recurrence. Radiotherapy is contraindicated due to the potential risk of anaplastic transformation. MDT review is recommended.
Neuroendocrine carcinoma	Multimodal treatment with chemotherapy using a platinum agent paired with etoposide and radiotherapy is often required because of its aggressive behavior. The first-line regimen, given every 21 days for 4- 6 cycles, includes; ● IV cisplatin 80mg/m^2 / IV carboplatin (AUC 5-6) on Day 1 plus ● IV etoposide 80mg/m^2 on Days 1, 2, and 3. Surgery may be considered in stage I and II disease. Systemic therapy should be individualized according to differentiation, proliferative index, and disease extent. MDT review is mandatory.
Clear cell carcinoma	Management should be individualized based on the stage, tumor size, and anatomical location. Surgery often plays a major role in stage I and early-stage II disease. Adjuvant treatment should be guided by stage, margins, and recurrence risk. Advanced, metastatic, or recurrent disease is managed by systemic chemotherapy using platinum doublets paired with targeted therapy, i.e., bevacizumab. Immunotherapy, e.g., pembrolizumab, following molecular profiling (e.g., MSI-H, dMMR, TMB-H) may be useful. MDT review is mandatory.
Rare histological subtypes	Management should be individualized following MDT review and available evidence. Referral to specialized centers should be considered where appropriate.
AUC: area under the curve; CTLA-4: cytotoxic T-lymphocyte-associated protein 4; dMMR: deficient mismatch repair; LAG 3: lymphocyte-activation gene 3; MDT: multidisciplinary team; MSI: microsatellite instability; SCC: squamous cell carcinoma; TMB: tumor mutational burden.	

7.7 Post-treatment surveillance

Table 27. GOSK recommendations on post-treatment surveillance of vaginal cancer

Time interval	GOSK recommendations
0–72 hours after surgery	Assess haemodynamic stability, pain control, wound status, bleeding, infection, thromboembolic complications, urinary output, and bowel function to facilitate early identification and management of post-operative complications.
2–6 weeks after surgery	Review surgical recovery, wound healing, urinary and bowel function, sexual symptoms, and treatment-related complications. Final histopathology, margin status, and nodal status should be reviewed, and the need for adjuvant therapy determined.
3 months following completion of primary treatment	Clinical assessment; Clinical examination should be performed to establish post-treatment baseline status, assess treatment response, and identify persistent symptoms or treatment-related complications. Imaging; Pelvic MRI should be performed as the preferred imaging modality to assess treatment response, establish post-treatment radiological baseline status, and identify residual disease. CT should be performed where MRI is unavailable or contraindicated. PET-CT, where available, may provide additional value in detecting residual, recurrent, or occult metastatic disease. Imaging findings should guide subsequent surveillance and treatment planning.
Every 3–6 months for the first 2 years	Clinical review should include symptom assessment, pelvic examination, and evaluation for recurrence, treatment toxicity, sexual dysfunction, vaginal stenosis, menopausal symptoms, and psychosocial effects. Imaging should be performed where clinically indicated.

Time interval	GOSK recommendations
Every 6–12 months for the next 3–5 years	Surveillance should include clinical examination and symptom-directed investigations to identify delayed recurrence and late treatment effects.
Annually thereafter	Long-term follow-up should be individualized according to recurrence risk (high-risk patients include those with stage II-IV), histological subtype (aggressive histological subtypes include clear cell, melanoma, verrucous carcinoma, and sarcomas), treatment received (management of side effects of surgery, RT or CT), and patient needs (e.g. pain, sexual dysfunction, genitourinary symptoms among others).
New symptoms or abnormal examination findings during follow-up	Imaging should be performed in patients with abnormal bleeding or vaginal discharge, pelvic pain, urinary symptoms, bowel symptoms, unexplained weight loss, or clinical suspicion of recurrent or metastatic disease.
Suspected recurrence or new lesion identified during follow-up	A biopsy should be performed, where feasible, to confirm recurrent disease or a new malignancy prior to initiation of further treatment. Histological confirmation is recommended to distinguish recurrence from treatment-related changes or benign pathology.
Patients with prior HPV-related disease or retained cervix	Cervical and/or vaginal cytology with HPV testing should be considered in patients with previous cervical neoplasia, retained cervix, prior HPV-associated lower genital tract disease, or risk of multifocal HPV-related pathology. Surveillance should be individualized according to prior pathology and treatment received.
CT: computed tomography; MRI: magnetic resonance imaging; PET-CT: positron emission tomography-computed tomography	

7.8 Supportive care, Survivorship, and Palliative care

Table 28. GOSK recommendations on supportive care, survivorship, and palliative management in vaginal cancer

Domain	GOSK recommendations
Patient education and survivorship care	Patients should receive education regarding symptoms of recurrence. Pelvic/local recurrence may present with AUB, vaginal discharge, pelvic pain, urinary symptoms, fistula formation or a vaginal mass. Metastatic symptoms include groin swelling, persistent cough, difficulty in breathing, or low-grade fever. Counselling on healthy lifestyle behaviour like smoking cessation, nutrition, physical activity, weight management, sexual health, and indications for earlier clinical review.
Sexual health and vaginal rehabilitation	Sexual dysfunction, vaginal dryness, dyspareunia, and vaginal stenosis should be routinely assessed. Lubricants, moisturizers, vaginal dilators, topical hormonal therapy where appropriate, and sexual counselling should be offered according to symptoms and treatment received.
Physical rehabilitation	Rehabilitation interventions, including physiotherapy, pelvic floor therapy, occupational therapy, and exercise programs, should be considered to optimize function and quality of life.
Psychological and psychosocial support	Patients should be assessed for psychological distress, anxiety, depression, altered body image, and social challenges. Referrals for psychological support should be offered where indicated.
Management of treatment-related toxicities	Long-term complications, including vaginal stenosis, bowel dysfunction, urinary symptoms, lymphoedema, menopausal symptoms, and radiation-related toxicities, should be actively assessed and managed.
Pain and symptom management	Pain, fatigue, nausea, constipation, anorexia, bleeding, and other disease-related symptoms should be assessed and treated.
Palliative care integration	Early palliative care involvement should be considered in patients with advanced, recurrent, metastatic, or symptomatic disease to support symptom control and quality of life.
HPV vaccination and prevention	HPV vaccination should be offered in accordance with national immunization guidelines, where appropriate. Patients should receive counselling regarding HPV prevention and risk reduction strategies.
Multidisciplinary supportive care	Supportive care should involve multidisciplinary collaboration among oncology, palliative care, nursing, physiotherapy, nutrition, psychology, and social support services, where available.
Advanced disease and end-of-life care	Patients with progressive disease should receive individualized supportive care focused on symptom relief, psychosocial support, dignity, and quality of life.
HPV: human papillomavirus; WHO: World Health Organization.	

WHO Pain Protocol

Pain level	*Recommended Treatment*
Mild pain	*Non-opioid analgesic, e.g. paracetamol/NSAIDs*
Mild -moderate pain	*Weak opioids +/- non -opioids.*
Moderate- severe pain	*Strong opioids e.g. oral morphine +/- non-opioids*
Persistent or uncontrollable pain	*Optimize strong opioids and consider other pain-relieving interventions e.g. nerve blocks.*

7.9 Evaluation of suspected recurrent disease

Table 29. GOSK recommendations on evaluation and diagnostic workup of recurrent vaginal cancer

Component	GOSK recommendations
Clinical suspicion of recurrence	Recurrent disease should be suspected in patients presenting with new vaginal bleeding, pelvic pain, abnormal vaginal discharge, urinary symptoms, bowel symptoms, lower limb oedema, unexplained weight loss, abnormal examination findings, or new lesions identified during follow-up.
Clinical assessment	A comprehensive history and pelvic examination should be performed, including assessment of symptom onset, prior treatment received, treatment-free interval, performance status, and the extent of suspected recurrence.
Histological confirmation	A biopsy should be performed, where feasible, to confirm recurrent disease prior to initiation of further treatment. Histological confirmation is recommended to distinguish recurrence from treatment-related changes, radiation effects, or benign pathology.
Imaging assessment	Pelvic MRI should be performed as the preferred modality to assess local recurrence and disease extent. CT should be performed where MRI is unavailable or contraindicated. PET-CT, where available, may assist in identifying occult metastatic disease and guide treatment planning.
Restaging evaluation	Patients with recurrent disease should undergo reassessment of tumor location, local extent, nodal involvement, metastatic disease, and performance status to guide treatment intent.
Biomarker and molecular testing	Molecular testing, including PD-L1, MSI, TMB, HER2, NTRK, and other actionable biomarkers, should be considered to guide immunotherapy or targeted treatment where available.
Multidisciplinary review	A multidisciplinary team review is mandatory prior to treatment planning for recurrent disease. Input from gynaecologic oncology, medical oncology, radiation oncology, pathology, radiology, palliative care, and other relevant specialties should be considered.
Treatment intent assessment	Management planning should determine whether treatment intent is curative, disease-controlling, or palliative based on disease extent, previous treatment, and patient factors.

CT: computed tomography; HER2: human epidermal growth factor receptor 2; MRI: magnetic resonance imaging; MSI: microsatellite instability; NTRK: neurotrophic tyrosine receptor kinase; PET-CT: positron emission tomography-computed tomography; PD-L1: programmed cell- death ligand 1.

7.10 Treatment of recurrent or metastatic vaginal cancer

Table 30. GOSK recommendations on systemic treatment options for recurrent or metastatic vaginal cancer

Clinical setting	GOSK recommendations
Localized recurrent disease without prior pelvic radiotherapy	Definitive chemoradiotherapy with EBRT, brachytherapy, and concurrent cisplatin 40 mg/m² weekly during radiotherapy (or carboplatin where cisplatin is contraindicated) should be considered where feasible. Curative treatment intent may be appropriate in selected patients.
Localized recurrent disease following prior pelvic radiotherapy	Surgical excision or pelvic exenteration may be considered in carefully selected patients with resectable disease and acceptable performance status. An MDT review is mandatory.
First-line systemic treatment for recurrent or metastatic disease	Platinum-based doublet chemotherapy should be considered. Recommended regimens include cisplatin 50 mg/m² IV + paclitaxel 135–175 mg/m² IV every 21 days for 6 cycles, or carboplatin (AUC 4–5) + paclitaxel 135–175 mg/m² IV every 21 days for 6 cycles. Regimen selection should consider renal function, prior platinum exposure, and performance status.
Patients eligible for antiangiogenic therapy	Cisplatin or carboplatin + paclitaxel + bevacizumab every 21 days for 6 cycles may be considered. Patients should be monitored for hypertension, bleeding, thromboembolism, fistula formation, and impaired wound healing. • Primary phase (administered every 21 days for 6 cycles, i.e., Cycle 1- Cycle 6). • IV cisplatin 50 mg/m^2 / carboplatin (4–5 AUC) + IV paclitaxel (135–175 mg/m^2) + IV bevacizumab (10–15 mg/kg). • +/-Maintenance phase (administered every 21 days until disease progression or the patient experiences unacceptable toxicity) of IV bevacizumab 10-15 mg/kg.
PD-L1 positive tumors	Pembrolizumab + cisplatin or carboplatin + paclitaxel ± bevacizumab every 21 days for 6 cycles, may be considered where clinically indicated. PD-L1 positivity should be confirmed prior to treatment initiation, and a CPS score ≥ 1 is required. • Primary phase (administered every 21 days for 6 cycles, i.e., Cycle 1- Cycle 6) • IV pembrolizumab 200mg + IV cisplatin 50 mg/m^2/carboplatin (4-5 AUC) + IV paclitaxel (135-175 mg/m^2) +/- IV bevacizumab (10-15mg/kg). • +/-Maintenance phase (administered every 21 days for 28 cycles, i.e., cycle 7 - cycle 35). • IV pembrolizumab 200mg + IV bevacizumab (10-15mg/kg) only or • IV pembrolizumab 400mg (6 weekly) + IV bevacizumab (10-15mg /kg) every 3 weeks for 28 cycles.

Clinical setting	GOSK recommendations
MSI-high/dMMR or high tumor mutational burden (TMB) tumors	Immunotherapy, including pembrolizumab or nivolumab, may be considered based on the biomarker profile and treatment availability. Molecular testing is recommended where feasible.
HER2-positive tumors	Fam-trastuzumab deruxtecan may be considered in selected patients following biomarker confirmation and MDT review.
Persistent, progressive, or treatment-refractory disease	Alternative systemic therapy, symptom-directed treatment, best supportive care, and early involvement of palliative care should be considered based on performance status and treatment goals.
Premenopausal women requiring gonadotoxic treatment	Fertility preservation counselling should be offered prior to treatment where clinically appropriate and feasible. Referral to fertility specialists should be considered.
AUC: area under the curve; CPS: combined positive score; dMMR: deficient mismatch repair; EBRT: external beam radiotherapy; HER2: human epidermal growth factor receptor 2; MDT: multidisciplinary team; MSI: microsatellite instability; PD-L1: programmed cell-death ligand 1; TMB: tumor mutational burden.	

7.11 Systemic therapy regimens

Table 31. GOSK recommendations for systemic treatment options for advanced, recurrent, or metastatic vaginal cancer

Squamous cell carcinoma, Adenocarcinoma		
Chemoradiation	**Recurrent or metastatic disease**	
	First-line therapy	**Second-line or subsequent therapy**
Preferred, • Cisplatin • Carboplatin (if patient is cisplatin intolerant)	Preferred, PD-L1- positive tumors; • Cisplatin + paclitaxel+ pembrolizumab+ bevacizumab • Carboplatin+ paclitaxel+ pembrolizumab+ bevacizumab • Cisplatin/paclitaxel + bevacizumab • Carboplatin/paclitaxel + bevacizumab	Preferred, For TMB-H, PD-L1- positive, MSI-H/dMMR tumors; • Pembrolizumab
Other recommended if cisplatin/carboplatin are unavailable, • Capecitabine/mitomycin • Gemcitabine • Paclitaxel	Other recommended • Cisplatin/paclitaxel • Carboplatin/paclitaxel • Paclitaxel/topotecan+ bevacizumab • Paclitaxel/topotecan • Cisplatin/topotecan • Cisplatin • Carboplatin	Other recommended • Bevacizumab • Paclitaxel • Albumin-bound paclitaxel • Docetaxel • Fluorouracil • Topotecan • Vinorelbine • Irinotecan • Pemetrexed • Cemiplimab • Ipilimumab + nivolumab
		<u>Useful in certain circumstances</u> • PD-L1 positive tumors- nivolumab • HER2-positive tumors- fam-transtuzumab deruxtecan-nxki • RET gene fusion-positive tumors- selpercatinib • NTRK gene fusion-positive tumors- larotrectinib, entrectinib, repotrectinib.
dMMR: deficient mismatch repair; HER2: human epidermal growth factor receptor 2; MSI: microsatellite instability; NTRK: neurotrophic tyrosine receptor kinase; PD-L1: programmed cell-death ligand 1; RET: rearranged during transfection; TMB: tumor mutational burden.		

References

1. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2019. CA Cancer J Clin. 2019;69(1):7–34.
2. Adams TS, Rogers LJ, Cuello MA. Cancer of the vagina: 2021 update. Int J Gynecol Obstet. 2021;155(S1):19–27.
3. Wu X, Matanoski G, Chen VW, Saraiya M, Coughlin SS, King JB, et al. Descriptive epidemiology of vaginal cancer incidence and survival by race, ethnicity, and age in the United States. Cancer. 2008;113(10 SUPPL.):2873–82.
4. Lombe DC, Mwamba M, Msadabwe S, Bond V, Simwinga M, Ssemata AS, et al. Delays in seeking, reaching and access to quality cancer care in sub-Saharan Africa: A systematic review. BMJ Open. 2023;13(4):1–12.
5. Iyoke CA, Ugwu GO, Ezugwu EC, Ezugwu FO, Lawani OL, Onyebuchi AK. Challenges associated with the management of gynecological cancers in a tertiary hospital in South East Nigeria. Int J Womens Health. 2014;6(1):123–30.
6. European Society of Gynecological Oncology. vaginal cancer pocket guidelines [Internet]. Prague; Available from: https://www.esgo.org/media/2023/06/Pocket-Guidelines_Vaginal-cancer.pdf
7. Saito T, Tabata T, Ikushima H, Yanai H, Tashiro H, Niikura H, et al. Japan Society of Gynecologic Oncology guidelines 2015 for the treatment of vulvar cancer and vaginal cancer. Vol. 23, International Journal of Clinical Oncology. Springer Japan; 2018. 201–234 p.
8. Final PMB definition guidelines for ovarian cancer. Published date: 15 April 2019. Review due: 15 April 2021. 2019;(April 2019).
9. Donato V Di, Plotti F, Campus U, Roma B medico, Donato V Di, Bellati F, et al. Vaginal cancer Vaginal cancer. Crit Rev Oncol / Hematol [Internet]. 2011;81(May):286–95. Available from: http://dx.doi.org/10.1016/j.critrevonc.2011.04.004