

Exploring global barriers to optimal ovarian cancer care

Sfeir, Selina; Allen, Lucy; Algera, Marc Daniël; Morton, Rhett; Farrell, Rhonda; Brennan, Donal; Driel, Willemien J van; Rijken, Marcus J; Eiken, Mary; Sundar, Sudha S; Coleman, Robert L; Collaborators of the Global Equality in Ovarian Cancer Care project group

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4 **Exploring global barriers to optimal ovarian cancer care: a thematic analysis**

5 S. Sfeir S^{1*}, L. Allen^{1*}, M.D. Algera^{2,3,4*}, R. Morton⁵, dr. R. Farrell⁶, prof. dr. D. Brennan⁷, dr. W.J. van
6 Driel⁸, dr. M.J. Rijken⁸, M. Eiken⁹, prof. dr. S. Sundar¹, dr. R.L. Coleman^{9,10}, and the collaborators of
7 the Global Equality in Ovarian Cancer Care project group.

8

9 *These authors contributed equally to the work.

10 ¹University of Birmingham, Birmingham, United Kingdom.

11 ²Scientific Bureau, Dutch Institute for Clinical Auditing (DICA), Leiden, the Netherlands.

12 ³Department of Obstetrics and Gynecology, Maastricht University Medical Centre (MUMC+),
13 Maastricht, the Netherlands.

14 ⁴GROW- School for Oncology and Reproduction, Maastricht, the Netherlands.

15 ⁵Queensland Centre for Gynaecological Cancer, Brisbane, Australia.

16 ⁶Gynaecological Oncology Department, Chris O'Brien Lifehouse, Camperdown, New South Wales,
17 Australia

18 ⁷UCD Gynaecological Oncology Group, UCD School of Medicine, Mater Misericordiae, University
19 Hospital, Dublin, Ireland.

20 ⁸Julius Global Health Department, University Medical Centre Utrecht, The Netherlands.

21 ⁹International Gynecologic Cancer Society

22 ¹⁰SCRI, Sarah Cannon Research Institute, Nashville, Tennessee, United States.

23

24 Corresponding author:

25 M.D. Algera

26 Dutch Institute for Clinical Auditing

27 Rijnsburgerweg 10

28 2333 AA Leiden

29 The Netherlands

30 E-mail: m.algera@nki.nl

31 Telephone: 0031 (0) 85 902 44 00

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56 **ABSTRACT**

57 **Objective**

58 This study aims to explore the barriers to ovarian cancer care, as reported in the open-ended
59 responses of a global expert-opinion survey. We expect to highlight areas for improvement in global
60 ovarian cancer care and propose potential solutions to overcome these barriers.

61 **Methods**

62 Data from the expert-opinion survey, designed to assess the organisation of ovarian cancer care
63 worldwide, were analysed. The survey was distributed across a global network of physicians. We
64 examined free-text open-ended responses concerning the barriers to ovarian cancer care. A
65 qualitative thematic analysis was conducted to identify, analyse, and report meaningful patterns within
66 the data.

67 **Results**

68 A total of 1,059 physicians from 115 countries completed the survey, with 438 physicians from 93
69 countries commenting on the barriers to ovarian cancer care. Thematic analysis yielded five major
70 themes regardless of income-category or location: societal Factors, inadequate resources in hospital,
71 economic barriers, organisation of the specialty, and need for early detection. Suggested solutions
72 include accessible resource-stratified guidelines, multi-disciplinary teamwork, public education, and
73 development of gynecological oncology training pathways internationally.

74 **Conclusions**

75 This analysis provides an international perspective on main barriers to optimal ovarian cancer care.
76 The themes derived from our analysis highlight key target areas to focus efforts to reduce global care
77 disparities. Future regional analysis involving local representatives will enable country-specific
78 recommendations to improve the quality of care and ultimately to work towards closing the care gap.

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83 **KEY MESSAGES**

84 **What is already known on this topic**

85 Research is lacking on the perspectives of clinicians involved in ovarian cancer care and their
86 perceptions of the barriers faced. The structure paper of the Global Equality in Ovarian Cancer Care
87 Survey has identified multiple global disparities in care organisation, but in-depth qualitative analyses
88 of the main barriers that physicians face, have not yet been undertaken.

89

90 **What this study adds**

91 This study adds a unique qualitative dimension to the published data from the Global Equality in
92 Ovarian Cancer Care structure paper. The thematic analysis conducted in this study identified societal
93 factors, lack of hospital resources, economic factors, the organisation of the specialty, and the need
94 for early detection as key barriers to optimal ovarian cancer care. Potential solutions include the
95 development of accessible resource-stratified guidelines, promoting multi-disciplinary teamwork,
96 public education initiatives, and the expansion of gynaecological oncology training programs on a
97 global scale.

98

99 **How this study might affect research, practice or policy**

100 This study provides an international perspective on the obstacles faced by physicians in delivering
101 effective ovarian cancer treatment worldwide. The findings hold significance for policymakers,
102 clinicians and patient advocates, offering valuable insights to guide specific areas to enhance the
103 management of ovarian cancer globally. Future analyses of the survey data should consider a
104 regional approach, involving representatives from the different regions.

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110 INTRODUCTION

111 Ovarian cancer has the highest mortality among all gynecological cancers, with survival differences
112 observed worldwide, both between and within countries [1–4]. However, it is often patients from
113 resource-poor countries who face the worst prognoses. While significant research has investigated
114 the treatment and diagnosis of ovarian cancer [1,2], little is known about the barriers to implementing
115 these care plans in different countries, especially in resource-poor areas. This has key ramifications
116 for women in terms of quality of life and life expectancy.

117 There are multiple reasons why international ovarian cancer survival disparities exist. Studies
118 have suggested that survival disparities could be explained by differences in stage at diagnosis [4].
119 However, international survival disparities exist within each stage, suggesting poor or unequal access
120 to optimal treatment impacts survival rates [3,4]. Furthermore, within high-income countries, a two-fold
121 difference in survival from ovarian cancer can be observed, suggesting the presence of complex
122 structural challenges to care [5].

123 Current literature on global barriers to ovarian cancer care was scarce: only one study
124 described barriers in high-income countries [6]. However, our project group recently published the
125 first results of the Global Equality in Ovarian Cancer Care expert-opinion survey [7]. In this structural
126 paper, we have described the global organisation of ovarian cancer care across low, middle, and
127 high-income countries, and we identified the main barriers to optimal ovarian cancer care, both
128 unrelated to income category and income related. While these results provide a unique global view on
129 barriers faced by physicians, the published results lack in-depth qualitative analyses of the open-
130 ended responses [7].

131 The current study aims to build upon the results of the structural paper and identify and
132 explore the barriers physicians encounter in treating patients with ovarian cancer across different
133 hospitals, regions and countries. We will undertake a qualitative review of the perceptions of barriers
134 to optimal ovarian cancer care worldwide. By examining the challenges faced by those on the front
135 line of ovarian cancer care, we aim to elucidate the major areas for improvement in its management
136 globally, address the observed disparities, and propose potential solutions to overcome these
137 barriers.

138

139 **METHODS**

140 **Study Design and Setting**

141 We analysed data from the Global Equality in Ovarian Cancer Care expert-opinion survey study [7],
142 which aimed to assess ovarian cancer care organisation worldwide and ultimately close the care gap.
143 The survey was distributed by (the strategic partners of) the International Gynecologic Cancer
144 Society, European Society of Gynaecological Oncology, and Society for Gynecologic Oncology.
145 Therefore, the project reached a worldwide network of physicians treating ovarian cancer. The survey
146 was distributed in five languages (English, Spanish, Portuguese, Mandarin, and Russian), and
147 responses were translated into English and analysed.

148 The qualitative analysis focused on the free-text open-ended response question to “*What are*
149 *the main barriers to optimal ovarian cancer care in your hospital, region, or country? Please provide*
150 *any further comments in the space below*”. Thematic analysis was used to identify, analyse, and
151 report meaningful patterns from the data. The approach to the thematic analysis was inductive and
152 data driven. There were no prior assumptions about what was to be revealed from the free-text
153 responses, as the researchers were interested in understanding what the participants identified as
154 barriers to ovarian cancer care rather than using what previous literature had suggested was
155 meaningful.

156

157 **Thematic Analysis**

158 The thematic analysis proceeded according to the process described by Braun and Clarke [8]. The
159 free-text responses from the survey were read, and any that were not pertinent to the study aims were
160 excluded from the data set. Two researchers independently read through the free-text responses to
161 generate initial codes. These codes were then collated into potential themes by grouping codes with
162 similar patterns or concepts. The resulting thematic map had a collection of candidate themes and
163 sub-themes, reflecting all meaningful data. The next data analysis stage involved reviewing and
164 refining candidate themes, which was done in two parts. The first used Patton’s criteria [9] of internal
165 and external homogeneity to ensure that data within a theme formed a distinct, coherent pattern and
166 that data across different themes did not overlap. The second part involved referring to the dataset

167 and searching for any extracts that fit within the previously unidentified theme and ensuring that the
168 thematic map represented the whole dataset. Free-text responses that best represented the final
169 themes were selected and embedded within a narrative highlighting the main barriers to ovarian
170 cancer care globally. Finally, the project group discussed the potential solutions to the main barriers.

171

172 **RESULTS**

173 **Respondent Characteristics**

174 Overall, 1,059 physicians from 115 countries completed the survey (83% gynecological cancer
175 surgeons, 8% obstetricians/gynecologists, 9% other specialists). Further respondent characteristics
176 are described in the structure paper [7]. All respondents completed the multiple-choice question about
177 the barriers to optimal care [7]. A total of 438 participants from 93 countries commented in the free-
178 text fields (high-income n=137, upper-middle income n=142, lower-middle/low-income n=159) (**Figure**
179 **1**). The number of open-ended responses per country are displayed in **Supplementary Table 1**.
180 **Figure 2** displays a flow diagram summarising the participant responses.

181

182 **Thematic Analysis**

183 Five interrelated themes were identified across the dataset, these themes are reported along with
184 their respective sub-themes, examples of comments and the potential solutions to the barriers (**Table**
185 **1**). Our project group derived these potential solutions from the responses. Data excerpts have been
186 included to illustrate the views and perspectives described by the participants within each sub-theme.

187 **Societal Factors**

188 The country's political climate was a recurring motif in many responses. This was the case for
189 countries affected by war and conflict, such as Cameroon and Ukraine; however, this barrier extended
190 to countries where there was inequity between the public and private healthcare system, such as
191 Brazil (**Table 1**). In many countries, geography posed a barrier as patients found it physically and
192 logistically difficult to travel to facilities for care (for example in South Africa); this issue was especially
193 prominent in large countries with rural populations (**Table 1**). A somewhat ambiguous sub-theme
194 identified was that quality of ovarian cancer care still has a long way to go, irrespective of any

195 identifiable obstacle. There is the sense that although progress has been made, current care is
196 suboptimal (**Table 1**).

197 Inadequate Resources in Hospitals

198 The lack of human resources was a prominent sub-theme, with many responses citing lack of
199 specially trained staff members and overall personnel and appropriate training (**Table 1**). Increasing
200 patient demand was identified as directly impacting the care that ovarian cancer patients receive;
201 also, in some countries, patient demand has been exacerbated by the COVID-19 pandemic (**Table 1**).
202 Lack of access to diagnostic testing such as pathology and radiology services was seen in countries
203 from all income categories. Genetic counselling and molecular testing facilities were needed in lower-
204 middle-income countries and were particularly difficult to access on large-scale national levels (**Table**
205 **1**).

206 Economic Barriers to Treatment

207 The cost of treatment was a significant sub-theme identified regardless of countries' income status
208 (**Table 1**). The high costs meant that many patients could not afford their care, causing them to forego
209 their treatment. Besides, the high cost was mainly attributed to newer classes of targeted therapies,
210 such as PARP inhibitors. The cost of treatment was also problematic for countries with national health
211 insurance systems, for example in New Zealand (**Table 1**). Access to treatment was a particular issue
212 for lower/middle-income countries: new treatments for ovarian cancer were difficult to access, with
213 many describing an absence of availability in their country (**Table 1**). The funding of treatment was
214 the final sub-theme identified. For high-income countries, this funding was pertinent to therapies such
215 as hyperthermic intraperitoneal chemotherapy (HIPEC), other countries described more intricate
216 barriers to funding, complicated by different funding streams available from insurance companies or
217 the government (**Table 1**).

218 Organisation of the Specialty

219 A recurring theme was the overall organisation of gyne-oncology as a specialty; a need for
220 standardised care was highlighted (**Table 1**). While clear standards and guidelines have enhanced
221 the quality of care in some countries, other respondents highlighted that there are still disparities in
222 compliance and access to guidelines (**Table 1**). Further comments suggested that multi-disciplinary
223 teams were the key to managing their patients effectively (**Table 1**). The final sub-theme described

224 gyne-oncology not being recognised as a distinct specialty; several comments recalled the challenges
225 of multi-disciplinary teamworking and standardising care when the specialty does not exist within their
226 healthcare system. As a result, this led to difficulties in managing care and impacted professional
227 development (**Table 1**).

228 Need for Early Detection

229 The respondents frequently addressed delays in patients presenting to healthcare professionals as a
230 barrier to optimal care, creating complexity in managing cases; several factors were suggested to
231 explain women presenting at such advanced stages, like the lack of public knowledge on ovarian
232 cancer (**Table 1**). Public health awareness was a sub-theme related to the delayed presentation of
233 disease observed. Many responses expressed a desire to campaign for public health awareness and
234 education programs within communities, some suggested that governments should do more to
235 highlight the importance of this disease, while others suggested that it is the responsibility of primary
236 care physicians to educate patients about ovarian cancer (**Table 1**). Finally, the need for a national
237 screening program recurred amongst the free-text comments. A national screening program was
238 identified as something that would improve the early diagnosis of ovarian cancer, however none of the
239 responses suggested how this could be executed, nor acknowledged current literature of the
240 inadequacy of available screening tests (**Table 1**).

241

242 **DISCUSSION**

243 **Summary of Main Results**

244 This study identified and explored the barriers to optimal ovarian cancer care globally through
245 analysing questions from the Global Equality in Ovarian Cancer Care expert-opinion survey. This
246 qualitative, thematic analysis revealed the following themes as main barriers: societal factors,
247 inadequate resources in hospital, economic barriers to treatment, organisation of the specialty, and
248 the need for early detection. These themes were common across countries regardless of income
249 category or geographical location. Suggested solutions include accessible resource-stratified
250 guidelines, multi-disciplinary teamwork, public education, and development of gynecological-oncology
251 training pathways internationally.

252

253 **Results in Context of Published Literature**

254 Limited literature exists on international barriers to ovarian cancer care, with most studies focusing on
255 country-specific challenges rather than international comparisons. Nonetheless, several themes
256 generated by our study have been referenced within the current literature [7]. Similar barriers to
257 optimal cancer care have been recognised in the treatment of other cancers such as cervical cancer
258 [10].

259 We observed an overlap between the previously reported multiple-choice results regarding
260 the main barriers to ovarian cancer care question and the current qualitative findings [7]. The multiple-
261 choice results revealed main barriers regardless of income category, including patient, disease, and
262 social factors. Additionally, income-specific barriers to ovarian cancer care were identified, such as
263 the lack of surgical time and staff; patient preferences in high-income settings; treatment costs as well
264 as lack of access to radiology, pathology, and genetic services in middle and low-income contexts.
265 Furthermore, one-third of lower-middle and low-income respondents reported a lack of access to
266 systemic agents.

267 Geographical constraints continue to provide a barrier to optimal care, disproportionately
268 affecting the uninsured and the elderly, leading to delayed diagnoses [10]. Issues such as dispersion
269 of populations and distance from specialist centres were highlighted in our analysis. Lack of access to
270 specialised centres hinders effective management of ovarian cancer, particularly for patients from
271 lower socioeconomic backgrounds, while specialised centres are associated with improved outcomes
272 [10,11]. Strategies to overcome these barriers could include implementing telemedicine/telesurgery,
273 travel assistance, improving psychosocial support and increased social care involvement though their
274 implementation is often challenged by economic and healthcare constraints (discrepancy public vs.
275 private healthcare) or political instability (war and conflicts) [11,12].

276 A study examining barriers to accessing ovarian cancer treatments in seven high-income
277 countries identified challenges such as limited access to clinical trials, hospital understaffing, and
278 restrictions in prescribing expensive medications [6]. These challenges align with our themes of
279 inadequate hospital resources and the economic barriers facing both medical professionals and
280 patients. Notably, resource constraints affect all countries investigated, highlighting global disparities
281 in access to care. Moreover, discrepancies in the adoption of treatments like bevacizumab,
282 underscore differences in investment priorities globally [6]. In the current study, these observed

283 challenges are exacerbated in middle and low-income countries, necessitating further research to
284 understand the extent of the economic barriers in managing ovarian cancer. Furthermore, global
285 access to clinical trials should be improved and international societies like the International
286 Gynecological Cancer Society and the Gynecologic Cancer Intergroup should support capacity
287 building for clinical trials in middle and low-income countries.

288 A significant challenge is the lack of surgical staff and specialty-trained gynecological
289 oncologists [13]. Limited training opportunities and funding for fellowships hinder efforts to address
290 this gap, especially in low and middle-income countries [14]. Moreover, the migration of skilled
291 individuals from low and middle-income countries to high-income countries, the so-called 'brain drain',
292 further strains these healthcare systems [13]. Initiatives such as the Global Curriculum Mentorship
293 and Training Program (International Gynecologic Cancer Society) aim to bridge the gaps in training,
294 but additional efforts are needed to ensure adequate staffing levels worldwide [15].

295 Mirroring our findings, studies have supported centralised approaches to ovarian cancer care,
296 though challenges in initial costs and incentivizing referrals must be addressed, particularly in
297 politically unstable and lower-income countries [11, 12]. Locally applicable models of care like the hub
298 and spoke model in the United Kingdom, aim to reduce regional disparities in survival [5]. However,
299 the treatment of ovarian cancer by gyne-oncologists is limited by models of care, payment structures
300 and the awareness of the need to refer to gyne-oncologists [16].

301 Our findings have shown that a major limitation facing many countries is the overall
302 development of gyne-oncology as a specialty. Similarly, there is a recognised lack of clinical data
303 comparing clinical practices in ovarian cancer care between countries [6,17]. Comparison of the
304 clinical practices of seven high-income countries by Norell et al. determined that international
305 guideline adherence was inconsistent [6]. However, it must be acknowledged that the implementation
306 of international guidelines is not achievable in certain low-income regions, highlighting the need for
307 guidelines tailored to local contexts [18].

308 Empowering patients with ovarian cancer to seek referrals and increasing public awareness
309 of symptoms and treatments are crucial for early detection [12,17]. While many of our free-text
310 responses stressed a need for a screening program, a recent large trial investigating screening in
311 general populations found a stage shift but no evidence of reduced mortality [2,19]. Adopting

312 approaches like symptom-triggered testing could improve resource allocation, but long-term outcomes
313 require further investigation [20].

314

315 **Strengths and Weaknesses**

316 Strengths of the study include the global representation of the respondents (115 countries in total, 93
317 countries in the qualitative analysis) and the proportions of upper-middle and lower-middle/low-
318 income countries represented in the study (115 countries were represented in the study, including 47
319 out of 83 (57%) high-income, 36 out of 54 (67%) upper-middle income, and 54 out of 80 (67%) lower-
320 middle and low-income countries). In addition, the data were collected anonymously and therefore the
321 likelihood of social-desirability bias was reduced. The data was collected to allow participants to
322 provide feedback as much as they wanted, without time constraints or external pressures. Last, the
323 survey was distributed in five languages, ensuring there was no language bias.

324 The current study has certain weaknesses. First, the study was not initially designed to be a
325 qualitative study, and thus the free-text element of the survey was optional, introducing potential
326 participant bias. In addition, the respondents were predominantly contacted through the International
327 Gynecologic Cancer Society, Society of Gynecologic Oncology and European Society of
328 Gynaecological Oncology, therefore physicians who are not part of this were underreported. Several
329 countries had many respondents and therefore may be overrepresented in the analysis, whereas
330 other countries had few respondents and thus may be underrepresented. However, data analysis
331 ensured that countries from all income status levels were equally represented in the final themes.
332 Nonetheless, the results cannot be said to apply to any individual country or region, and further
333 country-specific analysis is required to tailor local interventions. This regional approach would ideally
334 be holistic including stakeholders and triangulating data from other sources including the Every
335 woman study [21].

336

337 **Implications for Practice and Future Research**

338 These analyses give insight into the main barriers to ovarian cancer care. Additional analyses should
339 be performed on the current survey data to enable regional recommendations to improve care,

340 especially in resource-poor countries. These future analyses should consider a regional approach,
341 involving representatives from the different regions.

342 We will need consensus building on what the best solutions are to improve equality in care
343 and outcomes. Potential solutions identified from our themes include accessible resource-stratified
344 guidelines, promoting multi-disciplinary teamwork, public education initiatives, and the expansion of
345 gynecological oncology training programs on a global scale. However, many of these potential
346 solutions will require significant societal changes and governmental financial support.

347

348 **CONCLUSIONS**

349 This analysis provides an international perspective on the main barriers to optimal ovarian cancer
350 care. The thematic analysis identified that Societal Factors, Inadequate Resources in Hospitals,
351 Economic Barriers to Treatment, Organisation of the Subspecialty of Gynecologic Oncology, and the
352 Need for Early Detection are the main barriers to optimal ovarian cancer care. Suggested solutions
353 include accessible resource-stratified guidelines, promoting multi-disciplinary teamworking, public
354 education, and the further development of gyne-oncology training pathways internationally. The
355 Global Equality in Ovarian Cancer Care project group aims to overcome these barriers through a
356 regional approach and, ultimately, to work towards closing the care gap.

357

358 **Author contribution**

359 SSf, LA, and MDA were shared first authors who contributed equally to the manuscript. SSf and LA
360 performed the qualitative analysis. SSf, LA, and MDA wrote the manuscript. MDA was guarantor. RM
361 revised the manuscript and performed analysis. RF, DB, WJvD, MJR, ME, SSu, and RLC performed
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363 manuscript.

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384 Alvarez Secord (Duke Cancer Institute, Durham, United Kingdom), G. Baiocchi (A.C. Camargo
385 Cancer Center, Sao Paulo, Brazil), K. Fujiwara (Saitama Medical University, Saitama, Japan), A.
386 Mukhopadhyay (Chittaranjan National Cancer Institute, Kolkata, India), N. Concin (Innsbruck Medical
387 University, Innsbruck, Austria), A. Fagotti (A. Gemelli University Hospital Foundation, Rome, Italy), M.
388 Leitao (Memorial Sloan Kettering Cancer Center, New York, United States), O. Zivanovic (Memorial
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392 Clinic Comprehensive Cancer Center, Rochester, United States), S.J. Chang (South Korea), I. De
393 Hingh (Catharina Hospital, Eindhoven, The Netherlands), G. Dreyer (University of Pretoria, Pretoria,
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396 Medicine, South Korea), P. Morice (Institut Gustave Roussy, Villejuif, France), B. Naoual (Hospices
397 Civils de Lyon, Lyon, France), J. Soon Yau Ng (National University Cancer Institute, Singapore,

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399 (VCU Medical Center, Richmond, United States), B. Rau (University Hospital Berlin, Berlin,
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483 **Table 1: Themes and potential solutions from the qualitative thematic analysis**

Major themes	Sub-themes	Examples of comments	Potential solutions*
1. Societal Factors	Political climate	<p><u>Cameroon</u>: "This region is a conflict zone which impacts access to care"</p> <p><u>Ukraine</u>: "The difficulties of patients treatment due to the war in my country"</p> <p><u>Brazil</u>: "There are great discrepancies between public and private care in our country".</p>	<ul style="list-style-type: none"> - Resource stratified guidelines - Regional approach involving representatives from the different regions
	Geographical constrains	<p><u>South Africa</u>: "Patients reside far from Chemofacility, leading to hesitancy to treat"</p> <p><u>Spain</u>: "One problem is the distance and dispersion of populations"</p> <p><u>Hawaii</u>: "We are separated by the ocean"</p>	<ul style="list-style-type: none"> - Investment in patient transport to centralized cancer care centres - Promotion of grass roots community led initiatives and groups to lobby government
	General improvement needed	<p><u>India</u>: "We are improving in India with respect to oncological services yet not there yet".</p> <p><u>Zambia</u>: "There has been some improvement in the care of patients in the last decade, but a lot more needs to be done"</p> <p><u>Colombia</u>: "We have the resources, but we recognize that much remains to be known".</p>	<ul style="list-style-type: none"> - Telemedicine and telesurgery implementation
2. Inadequate Resources in Hospital	Lack of human resources	<p><u>Peru</u>: "In my hospital. We are only 2 surgeons for five cities (1-2 million people)"</p> <p><u>Cameroon</u>: "Substandard nursing with inadequate nursing training in oncology especially for ward nursing"</p> <p><u>Russia</u>: "Debulking surgeries are often limited by the personnel's availability (coloproctologist, abdominal surgeon)"</p>	<ul style="list-style-type: none"> - Resource stratified guidelines - Regional approach involving representatives from the different regions
	Increasing patient demand	<p><u>India</u>: "Patient load is far more than the operating theatre availability leading to delay in starting treatment"</p> <p><u>Bangladesh</u>: "Ovarian Cancer Patients are increasing day by day in our country"</p> <p><u>Greece</u>: "The problems with surgical time and ICU beds have deteriorated during pandemic and surgical lists are growing fast"</p>	<ul style="list-style-type: none"> - Training and incentivized retention of staff - Enhanced recovery after surgery programs
	Access to diagnostic testing	<p><u>United States</u>: "It has taken longer to get radiologist procedures (biopsies) and diagnostic procedures (CT scans) performed because of lack of staff and access after COVID"</p> <p><u>Indonesia</u>: "No accredited laboratory for genetic testing, no genetic counsellor available, hence certain treatments are out of the international guidelines".</p> <p><u>Nigeria</u>: "genetic studies are required"</p> <p><u>Argentina</u>: "the genetic test for BRCA and HDR mutation is still not requested from all patients"</p>	

3. Economic Barriers to Treatment	Cost of treatment	<p><u>India</u>: “cost of treatment causes limitation of systemic therapy and increase in drop-out rate”.</p> <p><u>Peru</u>: “few women can be treated with some treatments like iPARP because it is very expensive”</p> <p><u>United States</u>: “financial toxicity is the biggest burden for patients currently... the drugs costs are unsustainable”</p> <p><u>New Zealand</u>: “some drugs are unfunded”.</p>	<p>- Regional approach involving representatives from the different regions</p> <p>- Involving pharmaceutical companies</p>
	Access to treatment	<p><u>Thailand</u>: “there are still some limitations for ovarian cancer patients [...] to access to anti-VEGF, PARP inhibitor and/or some second-line chemotherapy”</p> <p><u>Tunisia</u>: “targeted therapy and immunotherapy are not accessible in our country”</p>	
	Funding of treatment	<p><u>United Kingdom</u>: “lack of funding for HIPEC for Ovarian Cancer”</p> <p><u>India</u>: “Poor remuneration to hospital and doctors through insurance and government programs limits offering proper care to ovarian cancer patients”</p>	
4. Organisation of the Specialty	Standardisation of care	<p><u>Venezuela</u>: “it is necessary to standardize the approach of these patients and generate a more targeted training”</p> <p><u>Colombia</u>: “Multiple cancer centers in the city lack care protocols”</p> <p><u>Greece</u>: “North American guidelines are being applied and the treatment has a very high standards similar to the major referral centres of Europe and North America”</p>	<p>- Further development of gynae-oncology training pathways internationally</p> <p>- Resource stratified guidelines</p> <p>- Promotion of multi-disciplinary team care</p>
	Effective multi-disciplinary team working	<p><u>Brazil</u>: “The union of the multidisciplinary team with the patient diagnosed with ovarian cancer has brought very positive results in the patient’s outcome”</p> <p><u>India</u>: “It needs multidisciplinary dedicated team to manage the cases”</p>	
	Not a recognised specialty	<p><u>China</u>: “In China, there is no certification of Gynecologic Oncology”</p> <p><u>Brazil</u>: “Gyn-oncologist is not considered an official sub-specialty. This political issues impede the development of certification and training standardization”</p>	
5. Need for Early Detection	Delayed presentation of disease	<p><u>Indonesia</u>: “Ovarian cancer is complicated case in my hospital because the patient came almost in advanced-stage”</p> <p><u>Mexico</u>: “the service offered is for low-income people, our population is not educated, they arrive in very advanced clinical stages”</p>	<p>- Public education and awareness</p> <p>- Creating diagnostic referral pathways</p> <p>- Improving testing capabilities</p>
	Public health awareness	<p><u>Uganda</u>: “There is a serious lack of knowledge among patients regarding ovarian cancer symptoms hence they usually present late”</p> <p><u>India</u>: “More awareness amongst the primary physicians to diagnose the disease early as still majority present in advanced-stage”</p>	
	Lack of screening	<p><u>Bangladesh</u>: “Standard screening procedure is necessary for diagnosis of early-stage ovarian cancer”</p> <p><u>Russia</u>: “Screening program developing is needed”</p>	

484 *The potential solutions were derived from the (sub-)themes by the Global Equality in Ovarian Cancer

485 Care project group.

486 **Figure Legend**

487 **Figure 1:** Global Equality in Ovarian Cancer Care Survey: number of open-ended responses per
488 country to the barriers to optimal ovarian cancer care question.

489

490 **Figure 2:** Flow diagram of the participant responses.