BMJ Open Quality

Holistic Integrated Care in Ovarian Cancer (HICO)—reducing inequalities due to age, frailty, poor physical and mental health

Jonathan Frost ,[1] Claire Newton,[2] Lucy Dumas[1]

To cite: Frost J, Newton C, Dumas L. Holistic Integrated Care in Ovarian Cancer (HICO)—reducing inequalities due to age, frailty, poor physical and mental health. *BMJ Open Quality* 2025;**14**:e002714. doi:10.1136/bmjoq-2023-002714

Received 12 December 2023
Accepted 30 May 2024

[1]Royal United Hospitals Bath NHS Foundation Trust, Bath, UK
[2]University Hospitals Bristol and Weston NHS Foundation Trust, Bristol, UK

Correspondence to
Dr Jonathan Frost;
j.frost@nhs.net

ABSTRACT

Older patients have disproportionally poorer survival outcomes for ovarian cancer in the UK. Half of new diagnoses occur in those aged >65 years. Older patients are more likely to have other medical comorbidities reducing their fitness to receive chemotherapy or undergo cytoreductive surgery resulting in fewer patients receiving treatment. The Holistic Integrated Care in Ovarian Cancer (HICO) programme introduced a structured holistic patient assessment with both universal and targeted interventions to improve physical function and psychological well-being to reduce inequalities due to age, frailty, physical and psychosocial problems. The aim of the project was to evaluate the feasibility and impact of the intervention in patients being considered for the treatment of ovarian cancer. During the implementation of the project, all recruited patients underwent a holistic assessment followed by prehabilitation and rehabilitation support from physiotherapists, occupational therapists, dietitians, geriatricians, nurse specialists and psychologists according to need. The HICO intervention was successfully integrated into the patient pathway in both trusts. Patients who participated in the HICO project provided positive feedback. Overall global health scores improved in 59.6% of the 57 patients who undertook at least two assessments (p=0.006). The proportion of patients who underwent platinum doublet chemotherapy in the HICO cohort was higher (76.2%) compared with a retrospective cohort (57.6%) (p=0.0189). However, no significant difference in the rate of cytoreductive surgery was shown. The proportion of patients alive at 1 year from diagnosis was higher in the HICO intervention group (88.9%) compared with the historical cohort (80.0%) despite higher stage in the HICO group. Although not statistically significant (p=0.289), these data are not yet mature and further study is ongoing. Initial data on costs of ovarian cancer care demonstrated no increase, although the data are not yet mature. This pilot project was funded through the Ovarian Cancer Action IMPROVE UK Pilot Award scheme.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Prehabilitation programmes comprise measures to improve functional capacity ahead of treatment such as chemotherapy or major surgery for ovarian cancer. Multimodal prehabilitation includes physical exercise, nutritional optimisation, psychological support and review of underlying medical conditions.

⇒ There are no standardised guidelines for prehabilitation for patients with ovarian cancer, and the existing literature is heterogeneous.

WHAT THIS STUDY ADDS

⇒ Prehabilitation and rehabilitation such as the Holistic Integrated Care in Ovarian Cancer (HICO) intervention can be successfully integrated into the pathway of patient with ovarian cancer. Undertaking a holistic assessment and addressing issues identified may help narrow the survival gap between our oldest patients and their younger counterparts. The HICO programme was well received by patients and clinicians alike.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ This report demonstrate that intensive prehabilitation and rehabilitation are feasible in patients undergoing intensive treatment for ovarian cancer. Work is ongoing to combine the outcomes from the three IMPROVE UK Prehabilitation pilot projects to assess if the interventions resulted in improved outcomes for patients.

PROBLEM

Ovarian cancer predominantly affects older women with around half of all new diagnoses occurring in those aged 65 and over.[1] It has repeatedly been demonstrated that older patients with ovarian cancer receive less-intensive treatment, a key factor in the disproportionately poorer survival outcomes in older women with ovarian cancer in the UK and internationally.[2] Older patients are more likely to have medical and functional comorbidities that can lead to relative undertreatment.

Within the UK major hospitals are either designated as gynaecology cancer units that undertake diagnostic and low-stage cancer surgical work or gynaecology cancer centres that offer the full range of surgical oncology services. The Royal United Hospitals Bath NHS Foundation Trust (RUH) and University

Hospitals Bristol and Weston NHS Foundation Trust (UHBW) both provide specialist gynaecological cancer services as cancer centres. Together, the two cancer centres serve a population of 2 million and care for over 150 patients with ovarian cancer every year, providing specialist medical and surgical oncology services.

Both the RUH and UHBW cancer centres treat an increasing number of older patients with ovarian cancer but the proportion of patients receiving standard care is lower in this group.[2] Prior to this improvement project patients' general frailty due to age, physical and mental comorbidities were managed on a patient-by-patient basis. No formal programme for the assessment and management of age-related frailty existed at either trust.

There is projected to be a large increase in the number of older people in the area of the RUH and UHBW. Between 2016 and 2029, the number of people aged over 75 in the local population is projected to increase by 36%. Both cancer centres have identified age and age-related physical and mental frailty to be major barrier to the effective treatment of ovarian cancer.

This project aimed to integrate a structured holistic approach in the care of older patients with ovarian cancer. We aimed to reduce inequalities in treatment due to age, frailty, physical and psychosocial problems. This would be demonstrated by increasing the number of patients receiving platinum doublet chemotherapy and cytoreductive surgery.

BACKGROUND

Increasing age at diagnosis of ovarian cancer is associated with disproportionately poorer survival outcomes due to a combination of factors including higher rates of emergency presentation, more advanced disease and a higher burden of medical and functional comorbidities.

Most importantly, older women receive less-intensive treatment than their younger counterparts.[2] While this problem is not unique to the UK, the UK survival rates for ovarian cancer and particularly in older women lag behind comparable western nations.[3] The Ovarian Cancer Audit Feasibility Pilot demonstrated decreased treatment rates with increasing age. From a local perspective, a retrospective review of the management of patients receiving care for ovarian cancer was undertaken. This review showed that increasing age was associated with lower rates of receiving standard of care (35% >80 years old vs 78% of 65–69 years old, p=0.000). Older women were also less likely to complete the planned chemotherapy course (p=0.034).

Older patients fitness' and ability to tolerate surgery and chemotherapy may be underestimated using traditional assessment such as ECOG Performance Status and modifiable physical, psychosocial and functional issues are not routinely addressed.[4–6] Importantly, studies show that older women do not desire active treatment any less than their younger counterparts.[7] In addition, it has been demonstrated that the current model of multidisciplinary team meeting decision-making may disadvantage older patients with complex health and social care needs.[8] Carboplatin and paclitaxel combination treatment, even in a population of vulnerable older women, has been shown to be superior to single-agent carboplatin.[9] Facilitating optimal treatment, defined as combination platinum-based chemotherapy and surgery by undertaking a holistic assessment and addressing issues identified, may help narrow the survival gap between our oldest patients and their younger counterparts.

Comprehensive holistic geriatric assessments improve quality of life and reduce chemotherapy toxicity rates.[10] International guidance recommends a geriatric assessment be undertaken in all patients aged 65 years and over being considered for systemic anti-cancer therapy.[10] This however remains far from the standard of care in the UK. Implementing a geriatric assessment and multimodal programme of physiotherapy, psychological, nutritional and functional support has the potential to dramatically improve the quality of life of older patients immediately and subsequently to improve optimal treatment rates and therefore survival outcomes.

MEASUREMENT

Within this project, the effectiveness and impact of our project were measured using clinically relevant outcome measures consistent with the project aims including length of postoperative stay, time from surgery to next chemotherapy, proportion of patients who underwent surgery and carboplatin-based chemotherapy, proportion of patients who received carboplatin and paclitaxel combination chemotherapy, surgical postoperative complication rates and transfusion demand. Longitudinal functional and quality-of-life assessments were collected to objectively measure progress during the study. Functional outcomes included 6-min walk test, grip strength, 30 s sit to stand test and maximum inspiratory pressure. Comprehensive qualitative assessment of patients' views and perceptions of project participation was undertaken to assess the acceptability of the intervention and to inform changes in the intervention during improvement cycles.

Clinically relevant outcome measures were compared with a historical cohort in an attempt to assess the impact of the Holistic Integrated Care in Ovarian Cancer (HICO) intervention. A total of 108 consecutive patients from a historical comparator cohort (1 October 2018 to 30 September 2019) were identified. The historical cohort identified a proportion of patients who underwent cytoreductive surgery of 81.5%, mean postoperative length of stay of 6.3 days, a mean length of time between cytoreductive surgery and next cycle of chemotherapy (of those who underwent surgery and further chemotherapy was appropriate) of 40.3 days, a proportion of patients who completed 6 cycles of chemotherapy (single-agent or combination) of 84.3%, proportion of patients who experienced no surgical complications of 67%, proportion of patients who received carboplatin and paclitaxel

combination chemotherapy of 57.6% and a proportion of patients who received a perioperative blood transfusion of 23.3%.

DESIGN

The project was a joint endeavour between the RUH and UHBW.

The project organisation consisted of the HICO Project Board, the HICO Implementation Group and the Patient Advisory Group (PAG). The HICO Project Board comprised the three project leads—RUH surgical oncologist, UHBW surgical oncologist and RUH medical oncologist, the project manager and the project's patient experience lead. The board was responsible for strategic decisions and planning for the project. The HICO Implementation Group was responsible for the day-to-day delivery of the intervention and had representation from both trusts and all specialist groups involved in the project.

The HICO intervention consisted of a holistic assessment followed by targeted support from physiotherapists, occupational therapists, dietitians, geriatricians, nurse specialists and psychologists as required to improve functional independence and quality of life during and following on from treatment. Patients were eligible for entry into the HICO programme if they were 55 years old or older, had a high likelihood of having an ovarian malignancy and were being considered for treatment, had completed a maximum of one cycle of neoadjuvant chemotherapy or had had initial cytoreductive or diagnostic surgery and were being considered for adjuvant treatment.

The assumption was made that all patients would require physiotherapy input; 50% of patients would require dietetics and clinical psychology; 31% of patients would require geriatrics and 25% of patients would require occupational therapy.

Each patient was allocated 5 hours of physiotherapy time; those that require clinical psychology had 1 hour 45 min of clinical psychology time allocated; those that required geriatric assessment were allocated 50 min and those that required dietetic input were allocated 2 hours 45 min.

Each of the therapy groups involved in the intervention facilitated webinars to educate other colleagues on the interventions that they would be delivering to patients. These sessions were recorded for colleagues unable to attend and the wider multidisciplinary teams.

All recruited patients underwent baseline HICO assessment undertaken by the gynaeoncology clinical team. The initial assessment was used to identify patients that would need to be seen by the dietitians, geriatricians and clinical psychologists as well as those that needed smoking cessation advice and help with reducing alcohol consumption. Patients were also asked to complete quality-of-life assessments (EORTC QLQ-C30 and EORTC QLQ-ELD14) at baseline. A patient information leaflet about the intervention was given to patients which included a brief overview of the project, specialist interventions and the plans for service evaluation and patient involvement.

All patients were referred to physiotherapy. Patients were seen within 4 weeks of referral and subsequently followed up every 4 weeks over the 6-month intervention period. Instrumental activities of daily living (IADL) and activities of daily living (ADL) scores were completed by physiotherapists and used to triage those who needed occupational therapy input. During the course of the project (plan, do, study, act (PDSA) 2), this was replaced by the EORTC QLQ C30 and module ELD14 to streamline the assessment process.

Patients underwent occupational therapy for fatigue and assistance with ADLs or IADLS. Follow-ups were arranged to review SMART goals and any changes recommended to manage fatigue and sleep.

An adjusted Malnutrition Universal Screening Tool (MUST) was completed for all patients at initial assessment. Questions regarding the presence of ascites and dietary intake were added owing to the concern of missing patients at risk of malnutrition based on weight loss alone given the patient cohort characteristics. Patients were assessed as low risk (MUST=0), moderate risk (MUST 1), or high risk (MUST 2 or more). Patients with a MUST 0 were provided with the Macmillan healthy eating and cancer leaflet. Patients with a MUST 1 received a 'coping with a small appetite' or equivalent leaflet and food first advice (food fortification, high energy and protein diet advised) provided by the clinical nurse specialist, surgeon or physiotherapist. Patients with a MUST of 2 or more were referred to the dietitian and received a telephone consultation. The dietitian completed a detailed dietary assessment and symptom profile, provided dietary advice and where indicated nutritional supplements.

Patients were screened for geriatrician assessment using a combination of the G8 frailty score, the presence of polypharmacy or complex comorbidity. Patients meeting the criteria (G8 score <14, previous falls, 5 or more daily medications or complex comorbidity) were then reviewed face to face by a geriatrician. This was changed at the end of PDSA cycle one.

Patients were referred to a clinical psychologist if they scored greater than 10 on the HADS (Hospital Anxiety and Depression Scale) questionnaire. The psychological impact and legacy of cancer diagnosis can involve a disabling degree of acute trauma—stress and shock. The initial sessions were aimed at normalising and managing the impact of such a significant and threatening event. The sessions also assessed for any pre- or comorbid psychosocial factors that can influence the meaning of the diagnosis and treatment that might require level three or four supportive care.

Smoking status and alcohol consumption were assessed at baseline. Full blood count and haematinics were taken for all patients to proactively manage anaemia.

Patient engagement included HICO PAG meetings with the clinical specialists, development and use of

questionnaires to gain feedback from patients and focus groups.

STRATEGY

The aim was to integrate and refine a structured holistic approach to care for older patients with ovarian cancer to reduce inequalities due to age, frailty, physical and psychosocial problems as well as improving the patient experience of the treatment pathway over two PDSA cycles. Each PDSA cycle involved an iteration of a four-stage problem-solving model which was scheduled to run over a period of 5–6 months between January 2022 and January 2023. During each cycle, the aims outlined above were evaluated against the progress in the project according to the clinical measures outlined as well as feedback from the professionals and patients involved in the project. This led to targeted improvement to the intervention as outlined below.

PDSA 1: in the first PDSA cycle, the intervention was delivered as outlined above. The project recruited to target with recruitment of 56% of the total target of 80 patients. Alongside this, patient feedback was gathered in the form of questionnaires and structured interviews. This feedback as well as the feedback from the specialists involved in the project was reviewed in a workshop with representation from all the specialties involved in the project and the PAG. Changes implemented for the second PDSA cycle are outlined below.

PDSA 2: a significant change to the intervention was the adoption of tiered levels of care as the intervention in its initial form was deemed overly resource intensive. Under the tiered intervention, patients were identified as having low, moderate or high need for each of the areas of specialist intervention (dietetics, physiotherapy, geriatrics, occupational therapy and clinical psychology) and more targeted interventions introduced.

Based on patient feedback, the patient information leaflets were replaced with a single-care plan document with useful checklists and resources including fitness tracker, next appointment details and links to resources on the HICO webpage. Dietary advice for all patients was incorporated into the care plan. The HICO webpage was also refreshed in light of the feedback from patients. This included videos for fatigue and sleep management as this was an area of need not initially identified. The assessment package was streamlined with a patient-completed component separated from the clinician-led assessment. To streamline the assessment process, the replacement of the ADLs questionnaire with questions from the EORTC QLC -C30 and EORTC QLQ ELD14 was undertaken to avoid duplication of effort. Due to the higher than anticipated demand for occupational therapy, the resource allocation increased from 25% to 50% of patients expected to need this service. Occupational therapists also developed a sleep and fatigue management video to potentially reduce the need for individual consultation. The geriatric team fed back that many patients referred needed dietary rather than geriatric medicine intervention, likely due to the heavy weighting of the G8 score to nutritional elements. In light of this, geriatricians remotely triaged patients with a borderline G8 or those only scoring in one domain using the referral information and electronic records and saw only those patients who were felt likely to need full review.

Three months into the second PDSA cycle, the clinical leads agreed to change the inclusion criteria as it was felt that a cohort of patients who would benefit were being excluded. The age cut-off was reduced to 45 years or older. In addition, patients younger than 45 years could be recruited if they had a performance status of 1 or more with clinical concern about ability to tolerate standard treatment. By the end of the second PDSA cycle, the recruitment target was met and exceeded at 82 patients (target 80 patients).

RESULTS

In total, 82 patients underwent the HICO intervention of whom 70 with ovarian cancer had sufficient data available for analysis. The mean age of the cohort was 70 and the age range was 49–88. At initial assessment, 5 (6.09%) patients were found to be current smokers and all these patients were referred for smoking cessation advice. 14 (17.07%) of the patients had an Audit C score of more than 3 and of these 6 were referred for alcohol consumption advice and guidance. Four (4.87%) of the patients reported a hospital or treatment-related phobia; 22 (26.8%) of the patients scored higher than 10 on HADS and all were referred for clinical psychology. The remaining patients with lower HADS score were provided with information on anxiety reduction techniques as required. 48 (59.3%) of the patients had a G8 frailty score of <14. 11 (12.3%) of the patients had a history of falls in the last 6 months and 33 (40.7%) of the patients were referred for geriatric triage. 37 patients (45.7%) were highlighted as being at medium or high risk of malnutrition and referred for specialist dietetic assessment. 25 (30.8%) were seen by an occupational therapist for assistance with ADLs or fatigue. Only one patient declined the physiotherapy element of the intervention. Four patients died during the HICO programme time period; no deaths were related to the HICO interventions.

Overall global health scores improved in 59.6% of the 57 patients who undertook at least two assessments (p=0.006). Improvement in physical functioning was seen in the majority of patients for whom at least two assessments were undertaken (table 1).

Cancer outcomes were compared with the historical cohort in an attempt to assess the impact of the HICO intervention. Of note, there was a lower proportion of International federation of Gynaecology and Obstetrics (FIGO) stage III and IV patients in the retrospective cohort (65.7%) compared with the HICO cohort (72.4%). There was also a lower proportion of patients with a higher ECOG performance status (2 or 3) in the

Table 1 Change in physical function over course of HICO intervention

Metric (n*)	Decrease (%)	No change (%)	Increase (%)	P value†
6MWT (n=49)	32.7	4.0	63.3	0.006
Grip strength (n=55)	30.9	7.3	61.8	0.075
Sit to stand (n=58)	34.5	13.8	51.7	0.036
Maximum inspiratory pressure (MIP) (n=21)	14.3	4.8	81.0	0.001

*Patients with two or more completed assessments were included.
†Paired t-test to test the null hypothesis that the mean difference between the observations is 0, a two-sided test at the 5% level, so a p value below 0.025 indicates significance.
HICO, Holistic Integrated Care in Ovarian Cancer; 6MWT, 6-min walk test.

retrospective cohort (7.5%) compared with the HICO cohort (15.9%). The mean age was also lower in the retrospective cohort (63.6 years) compared with the HICO cohort (69.6 years). This may have been due to the COVID pandemic and the later presentation of patients. All these factors will impact on the treatment outcomes reported. There was no statistically significant difference in length of postoperative stay, time from surgery to next chemotherapy, proportion of patients who underwent surgery and carboplatin-based chemotherapy, surgical postoperative complication rates and transfusion demand between the HICO and retrospective group. The proportion of patients who underwent platinum doublet chemotherapy in the HICO cohort was higher (76.2%) compared with retrospective cohort (57.6%) (p=0.0189). Given the later FIGO stage, age and performance status at diagnosis in the intervention cohort, poorer patient outcomes would have been expected and this was not seen. As such, these results need to be interpreted with caution. Of note, the proportion of patients alive at 1 year from diagnosis was higher in the HICO intervention group (88.9%) compared with the historical cohort (80.0%); although not statistically significant (p=0.289), these data are not yet mature.

Patient feedback was very positive, and 86% of patients would recommend the HICO intervention to a friend with ovarian cancer; 89% found the initial assessment was straightforward to complete and 79% found the number of appointments to see the HICO therapists easy to manage.

LESSONS AND LIMITATIONS

This project integrated a structured holistic approach to the care of older patients with suspected ovarian cancer. The intervention was demonstrated to be acceptable to patients as demonstrated by the positive patient feedback. A concern of the project team at the outset was that the appointment burden would be too great for patients, but this was not found to be the case.

When treating cancer and offering a multimodal health intervention, it is not possible to delineate the effect of the intervention from the effect of treatment without a matched control group. Treatment side effects can have a negative effect on physical and psychological well-being in both the short and long terms and more treatment received will result in more adverse treatment effects. This made evaluation of the impact of the intervention challenging to assess as linear outcomes relating to improvements in physical function or psychological well-being cannot be interpreted in the context of concurrent cancer treatment. There appeared to be an improvement in global health scores but it is not possible to comment on how much of this improvement relates to the HICO intervention and the lack of completion of longitudinal assessments for some patients may lead to a risk of reporting bias.

The HICO PAG was an integral part of this project and reinforced the need for patient engagement at the earliest stages and throughout to engender success from a patient perspective. Every HICO health professional had the opportunity to consult patients in the PAG meetings and used this information along with the responses from the telephone interviews and focus groups constructively to improve the provision of the HICO service. The two PDSA cycles provided a valuable structure within which to review and revise the project intervention in light of feedback received.

As this project was focused on addressing inequalities related to age in those with ovarian cancer, the number of patients receiving the intervention was relatively small. On one hand, this allowed for a high-quality and personalised intervention. The disadvantage of having a small cohort of patients was that the project could not benefit from economies of scale in the intervention. This meant the team had to arrange ad hoc appointments for individual patients rather than being able to bring patients to a single HICO clinic as there was no sufficient case load to cohort the patients into a dedicated clinic.

The education of clinical staff about the elements of the intervention resulted in a reported significant increase in knowledge and skills related to optimisation of physical, psychological, nutritional and general health of patients with gynaecological cancer and the team have been able to apply these new skills for the benefit of all their patients.

CONCLUSION

The project successfully completed the introduction of a structured holistic approach to improve care for older patients with ovarian cancer. Facilitating optimal treatment, defined as platinum-based combination chemotherapy and surgery by undertaking a holistic assessment and addressing issues identified, may help narrow the survival gap between our oldest patients and their younger counterparts.

When comparing a HICO intervention cohort with the retrospective cohort, the rate of patients receiving at least one cycle of carboplatin with paclitaxel was significantly improved in the HICO cohort. There was however no significant difference in the rate of cytoreductive surgery. The wider education of the multidisciplinary team was a significant success in the project. Feedback at the PDSA meetings and informal clinical observation demonstrated a significant increase in the confidence and competence with which the gynaecology cancer team managing elements of care such as nutrition, physical activity and psychological support. Patient feedback was almost universally positive with patients reporting feeling supported and enabled to manage their health proactively during cancer treatment.

A major achievement of the project was in facilitating a cultural shift in the approach to treating women with ovarian cancer and their holistic healthcare needs. The clinical teams fully embraced the concept of holistic assessment and targeting of areas where needs are identified. This in itself is a sustainable change in practice that is having an ongoing positive impact on patients. Clinical teams at the RUH are continuing to screen and assess patients using the HICO workbook as they feel this positively impacts on their ability to assess and manage patients throughout their treatment pathway and this HICO pathway has become the standard of care. In UHBW, the clinical team are moving towards integration of the HICO approach within the wider integrated care system's work to improve prehabilitation.

Comparison for patients treated in the retrospective cohort at RUH with the HICO cohort was available. These data showed the mean cost of care for 6 months after diagnosis was £18 037 prior to the intervention and £17 783 after the introduction of the intervention. This suggests no increase in the total costs of care with the addition of the HICO intervention and even suggests a possible reduction in care costs. Clearly, there is great scope for confounding factors within this and it should be noted that these data are currently based on a relatively small number of patients (n=25).

Work is ongoing to combine the outcomes from the three IMPROVE UK Prehabilitation pilot projects to assess if the interventions resulted in improved outcomes for patients.

Collaborators The HICO Collaborative From Royal United Hospitals Bath NHS Foundation Trust: Olu Kolade, Sam Comley, Barbara Kazubska, Philip Roots, Nina Stuckey, Mike Osborne, Zoe Thurston, Amy Slater, Rachel Bowyer, Laura Davies, Melinda Majai, David White, Frances Cathcart-Burn, Spencer Thorn, Abbie Bowers, Natalie Gaskell, Emily Moretti, Kirsty Hastie, Rebecca Leslie, Emma Manners, Lorna Coton. Rebecca Bowen, Nick Johnson. From University Hospitals Bristol and Weston NHS Foundation Trust: Rachel White, Joanne Porter, Melissa Taylor, Frances Rickard, Miriam Thake, Julie Dovey, Gemma Cass, Amit Patel, Jo Bailey, Sarah Platt, Catherine Chin, Axel Walther, Hoda Al-Booz, Samantha Cole.

Contributors All authors contributed to implementing the quality improvement project and the writing of the manuscript. JF is the guarantor.

Funding Funding was provide by the Ovarian Cancer Action Improve UK Project.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Ethics approval This paper is a report from service evaluation of a quality improvement programme. This was a service improvement project and not formal research.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as supplementary information.

ORCID iD

Jonathan Frost http://orcid.org/0000-0002-6390-0167

REFERENCES

1 Ovarian cancer incidence Statistics. 2023. Available: https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/ovarian-cancer/incidence
2 Dumas L, Bowen R, Butler J, *et al*. Under-treatment of older patients with newly diagnosed epithelial ovarian cancer remains an issue. *Cancers (Basel)* 2021;13:952.
3 Maringe C, Walters S, Butler J, *et al*. ICBP Module 1 working group. stage at diagnosis and ovarian cancer survival: evidence from the International cancer Benchmarking partnership. *Gynecol Oncol* 2012;127:75–82.
4 Repetto L, Fratino L, Audisio RA, *et al*. Comprehensive geriatric assessment adds information to Eastern cooperative oncology group performance status in elderly cancer patients: an Italian group for geriatric oncology study. *J Clin Oncol* 2002;20:494–502.
5 Extermann M, Boler I, Reich RR, *et al*. Predicting the risk of chemotherapy toxicity in older patients: the chemotherapy risk assessment scale for high-age patients (CRASH) score. *Cancer* 2012;118:3377–86.
6 Trillsch F, Woelber L, Eulenburg C, *et al*. Treatment reality in elderly patients with advanced ovarian cancer: a prospective analysis of the OVCAD consortium. *J Ovarian Res* 2013;6:42.
7 Nordin AJ, Chinn DJ, Moloney I, *et al*. Do elderly cancer patients care about cure? Attitudes to radical gynecologic oncology surgery in the elderly. *Gynecol Oncol* 2001;81:447–55.
8 Fitch MI, Gray RE, Franssen E. Perspectives on living with ovarian cancer: older women's views. *Oncol Nurs Forum* 2001;28:1433–42.
9 Falandry C, Savoye AM, Stefani L, *et al*. EWOC-1: A randomized trial to evaluate the feasibility of three different first-line chemotherapy regimens for vulnerable elderly women with ovarian cancer (OC): A GCIG-ENGOT-GINECO study. *JCO* 2019;37:5508.
10 Hurria A, Levit LA, Dale W, *et al*. Improving the evidence base for treating older adults with cancer: American society of clinical oncology statement. *J Clin Oncol* 2015;33:3826–33.