



## Enhanced recovery after surgery (ERAS) guided gynecologic/oncology surgery – The patient's perspective

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### ABSTRACT

**Objective:** Enhanced recovery after surgery (ERAS) pathways have demonstrated improvements in outcomes following benign gynecologic and gynecologic oncology surgery. However, there is limited data reporting the benefit of ERAS from the patient's perspective. This study aimed to explore patient knowledge of and experience with ERAS-guided surgery.

**Methods:** This interpretive descriptive study included participants who had undergone ERAS-guided gynecologic and gynecologic oncology surgery in Alberta, Canada using convenience sampling. Semi-structured interviews explored patient knowledge of ERAS, overall experience with surgery and recommended changes for surgical care. An inductive thematic analysis was conducted.

**Results:** Eight females aged 26–76 years old participated in the study who had gynecologic (n = 4) and gynecologic oncology (n = 4) surgery. Six themes central to participant experience of ERAS-guided surgery were identified: patient expectations, individual motivation, values and support, healthcare provider communication, trust in healthcare providers, COVID-19 and care co-ordination. Overall, specific knowledge of ERAS was low. Expectations were set by previous experience of healthcare (previous surgery or occupation), as well as information provided by healthcare professionals. Participants whose expectations aligned with physical experience of ERAS provided favourable perspectives. Participants recommended improving the quality, relevance and availability of information and establishing accessible follow up strategies.

**Conclusion:** Based on the finding that knowledge about ERAS was minimal, we advocate for improved education pertaining to ERAS recommendations. Acknowledging patients' expertise and motivation to engage in their care maybe one strategy to improve compliance with ERAS guidelines and improve outcomes for both patients and the healthcare system.

### 1. Introduction

Enhanced recovery after surgery (ERAS) is a globally established, multifaceted surgical pathway (Nelson et al., 2019; Nelson et al., 2023). The advantage of adopting ERAS across gynecologic and gynecologic oncology surgery has been confirmed, improving length of stay, recovery outcomes, readmission, complication rates and health-care costs (Bisch et al., 2021; O'Neill et al., 2023; Zacharakis et al., 2023; Chen et al., 2022; Chau et al., 2022; Ferrari et al., 2020). A recent meta-analysis demonstrated a significant reduction in length of stay (LOS) by

1.6 days, a 32 % decrease in complications and a 20 % reduction in readmission without increasing 30-day post-operative mortality, following ERAS implementation in gynecologic oncology surgery (Bisch et al., 2021). Greater satisfaction in patients undergoing ERAS guided gynecologic surgery versus conventional peri-operative care has also been confirmed, both 24 h after surgery and at discharge (Ferrari et al., 2020). Despite substantial clinical and cost benefits, ERAS guideline compliance remains low, with several barriers limiting implementation (Wijk et al., 2019; Nelson et al., 2016). Given the demonstrable relationship between increased guideline adherence and reduction in both

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LOS and complication rates (Wijk et al., 2019; Nelson et al., 2016), maximizing ERAS compliance presents a priority (Ljungqvist et al., 2021).

Whilst published literature examines the relationship between clinical outcomes and measurable compliance levels (Wijk et al., 2019; Nelson et al., 2016), there is a paucity of data reporting the experiences of ERAS-guided surgeries from a patient perspective, particularly following gynecologic surgery. This study aimed to explore patient knowledge of ERAS, their overall experience with ERAS-guided surgery and recommended changes for surgical care, following gynecologic/oncology surgery.

## 2. Methods

### 2.1. Study design

This interpretive descriptive study is reported according to the Consolidated criteria for Reporting Qualitative research (COREQ) checklist (Tong et al., 2007).

This study was part of a larger research initiative investigating ERAS pathway compliance among several types of surgery. This analysis explores the perspectives of patients who have undergone ERAS guided gynecologic and gynecologic oncology surgery in the province of Alberta, Canada.

### 2.2. Setting

Alberta Health Services (AHS) is publicly funded and the sole provider of health services in the province. ERAS was introduced in the provincial major referral centers for gynecologic and gynecologic oncology surgery between 2016–2018; Foothills Medical Centre (FMC) and Royal Alexandra Hospital (RAH).

### 2.3. Participants

Participants were eligible to participate if they were at least 18 years old and had undergone an ERAS-guided gynecologic or gynecologic oncology surgery in Alberta. A convenience sampling approach was used to recruit participants. Participants were recruited through poster advertisements posted in clinical areas (e.g., clinic waiting rooms and examination rooms) and social media posts. Interested patients contacted the research team via email or telephone. All patients that contacted the research team that met eligibility criteria were included. Recruitment continued until data saturation was achieved.

### 2.4. Data collection

Semi-structured interviews were used to collect data between October 25, 2022 and January 16, 2023. A semi-structured interview guide was used to direct the discussion and to provide prompts to facilitate data collection. The guide was initially developed by the research team and refined by our patient partner (S1). Interviews collected data on the participants' knowledge of ERAS, the execution of individual ERAS components, their overall experience with surgery, and asked for patient recommended changes for surgical care. Patient characteristics were also collected during the interviews using standardized questions with response prompts. Interviews were conducted by an interviewer and a note taker and were recorded using a secure, web-based platform (zoom). Participants were invited to use the video function or audio only, as per their preference. Audio recordings were transcribed verbatim using rev.com. Field notes were also collected and incorporated into the transcripts to provide additional context or information. Transcripts were validated by a member of the research team by listening to the audio recording while reviewing the transcript for accuracy. Audio recordings were deleted after the transcripts were validated, and all transcriptions were anonymized (only a study

identification number was included on the transcript).

### 2.5. Data analysis

Transcripts were uploaded into NVivo 12 for data analysis. An inductive thematic analytic approach, consistent with interpretive descriptive approach and outlined by Braun and Clarke (Braun and Clarke, 2006), was used. Transcripts were reviewed by the primary author (SJ) and a preliminary inductive coding scheme was constructed identifying frequent or significant themes presented in the data. A second analyst (RC) analysed the same transcripts to compare codes and interpretation of the scheme. New interpretations were constructed, codes merged and parent concepts re-organised. Through a dynamic process of peer checking and discussion, redundant codes were removed, and themes were refined. This continuous, iterative coding and analytic approach ensured credibility and confirmability of the analysis (S2). Both analysts kept an audit trail of the process to ensure dependability.

### 2.6. Reflexivity

All interviewers were familiar with the study and had knowledge of the literature around the effectiveness of ERAS. All interviewers were female with formal or experiential training in facilitating qualitative interviews and focus groups. Rehearsal interviews took place between the PI, interviewer and note taker, allowing the discussion of prompts and strategies for optimizing rich data collection.

Analyst SJ had clinical gynecological experience in the United Kingdom, with academic knowledge of ERAS but with practical experience of ERAS implementation within obstetrics only. Analyst RC had academic training and expertise in thematic analysis.

Interviewers and analysts were not healthcare providers in Alberta, nor patients who had undergone ERAS guided gynecological surgery previously, or during the study period. Interviewers and analysts had no prior relationship with interviewees.

### 2.7. Ethical consideration

Ethical approval was granted by the Health and Research Ethics Board at the University of Calgary (REB21-1021). Participants were provided with an information sheet about the study before they were scheduled for their interview. Participants understood the aim of this study was to better understand surgical care guidelines from their perspective. An oral consent script was read before the interview began and the interviews did not begin until consent was given. Several opportunities to ask questions about the study were provided, both before the interview and before the oral consenting process occurred.

## 3. Results

### 3.1. Participant characteristics

Eight females aged 26–76 (mean = 49.5, median = 48) participated in the study. Following the sixth interview, we achieved data saturation. All participants identified as women. The surgeries were performed by either gynecologic oncologists or general gynecologists, were all laparoscopic and included the following components: *hysterectomy* ( $n = 5$ ), *unilateral or bilateral salpingo-oophorectomy* ( $n = 4$ ), and *laparoscopic excision of endometriosis* ( $n = 2$ ). Reported indications for surgery included atypical hyperplasia ( $n = 1$ ), post-menopausal ovarian mass ( $n = 2$ ), post-menopausal bleeding (diagnosis not specified) ( $n = 1$ ), fibroids ( $n = 1$ ), pre-menstrual dysmorphic disorder ( $n = 1$ ) and pelvic pain ( $n = 2$ ). Surgeries were either day surgeries ( $n = 5$ ) or inpatient ( $n = 3$ ). All surgeries were performed in Calgary ( $n = 6$ ) and Edmonton ( $n = 2$ ), in major tertiary care centres ( $n = 6$ ) and general hospitals ( $n = 2$ ), between 2018 and 2023.

### 3.2. Thematic analysis

Six themes central to the patient experience of ERAS were identified: Patient expectations, individual motivation, values, and support, healthcare provider communication, trust in healthcare providers, COVID-19 and co-ordination of care. Key quotations depicting each theme are expressed in Table 1. These themes can be grouped as patient, healthcare provider and systemic/organizational factors with several interconnecting relationships (Fig. 1).

### 3.3. Patient expectations

The data revealed that participants' pre-operative expectations generally aligned with their experiences. Participant expectations appeared to vary by their previous healthcare experiences and the information provided by healthcare professionals, linking to healthcare provider communication.

Half of the interview participants were current or retired registered nurses (n = 4) or had an unspecified healthcare background (n = 1). Those with healthcare experience consistently expressed that their expectations accurately supported their experiences in terms of prehabilitation and recovery journey [Q1]. Participants with an occupation in healthcare understood the scientific basis behind ERAS components and surgical prophylaxis, such as chewing gum to prevent ileus [Q2,Q3]. However, this was not ubiquitous; one patient disregarded medical advice on the account of previous experience and presumed pre-existing knowledge. This resulted in missed opportunities to implement ERAS initiatives and optimise recovery [Q4].

Half of the participants interviewed had previously undergone surgery (n = 4), with two participants having had previous gynecological surgery specifically (n = 2). In general, participants with a surgical history described clear pre-operative ideas resulting in reduced anxiety, acceptance of ERAS recommendations and an overall positive experience [Q5,6]. Previous surgery facilitated the pre-emptive management of symptoms, such as post-operative nausea and vomiting, in turn enabling adherence to other ERAS components, as well as optimizing the surgical experience [Q7]. Increased confidence at discharge was also described by these participants [Q8]. Of those participants undergoing their first surgery (n = 4), three disclosed previous occupational healthcare experience. This bridged the gap in terms of practical knowledge of prehabilitation and recovery. However, an increased level of anxiety and was evident in this participant group relative to those with a history of previous surgery.

### 3.4. Individual motivation, values and support

Positive experiences of ERAS guided surgery were repeatedly reported by participants who particularly valued healthy life-style behaviours and demonstrated motivation to optimise their health for surgery [Q9]. However, in some cases the opportunity to create significant change was limited due to perception of a healthy lifestyle at baseline or lack of awareness of ERAS recommendations related to lifestyle changes [Q10,11].

Participants' support networks at home incentivised their preparation for surgery and discharge from hospital. Sources of support included spouses, neighbours, general practitioners and Indigenous elders [Q12,13]. Beyond the immediate support network, patients were reassured by the availability of healthcare professionals in the community both in a professional or casual capacity [Q13]. Participants described the role of their support network in upkeeping ERAS recommendations at home, particularly, pain control and mobility. Family and colleague support also contributed to the knowledge base that individuals demonstrated relating to ERAS guidelines and their purpose [Q14].

**Table 1**

Quotations representing patient, healthcare provider and systemic / organizational factor related themes.

Theme	Descriptive codes	Exemplar quotations
<b>Patient factors</b>		
Patient expectations	Impact of occupation	Q1: <i>I felt as though I had everything that I needed to know... I'm actually a retired nurse so I had a pretty good idea of what was to come.</i> [Participant C] Q2: <i>Specifically the enhanced recovery wasn't stressed to me, but I have a health background and I do understand the importance of following these procedures.</i> [Interview G] Q3: <i>[ERAS]...they recommended that because I know they wanted to get the peristalsis going.</i> [Interview A] Q4: <i>I know I had a sheet of paper that I kind of looked at. Threw it away because I kind of knew what I was supposed to do... No, I don't remember that at all. No that was not, oh, would that have gotten rid of the abdominal gas?</i> [Interview B] Q5: <i>I've had quite a few surgeries for someone my age... I had my appendix out as a teenager, and then, in the last five years, I've had two endoscopic sinus surgeries and a tonsillectomy.... pretty comparable in that I kind of knew what to expect in terms of going under and what to expect for recovery. So I felt like I was well-informed in that regard.</i> [Interview F] Q6: <i>I've had many abdominal surgeries before related to gynaecological problems and so I knew what to expect, and I was given the booklet on enhanced rapid (recovery after surgery)... To discharge it (me) quickly.</i> [Interview A] Q7: <i>I think they gave me something in the anaesthetic so I wouldn't get sick because I know in a previous surgery I threw up like crazy after.</i> [Interview B] Q8: <i>(I) felt confident at home – because of my past experience.</i> [Interview A]
	Impact of previous surgery	Q9: <i>It was kind of recommended to focus on lung capacity and fitness in that way because.... the nature of the surgery and the position I would be in... I focused more on emotional regulation techniques and also mindfulness just because already I know that I'm an anxious person, and I deal with anxiety.</i> [Interview F] Q10: <i>I eat pretty healthy anyway, so just continuing on with my diet and stopping supplements and medications that I was advised to stop.</i> [Interview C] Q11: <i>It would be maybe helpful if enhanced recovery was</i>
Individual motivation, values and support	Patient motivation	(continued on next page)

Table 1 (continued)

Theme	Descriptive codes	Exemplar quotations
	Sources of support	<p>explained a little bit more in depth, because if there was something that I could have done to change my diet ahead of time, I would have done that, but I wasn't aware of it. [Interview G]</p> <p>Q12: I talked to my Indigenous elder. I'm not Indigenous, I'm a settler... so I did talk with my mentor and my elder just about what I could do to prepare and some things I could do after. [Interview H]</p> <p>Q13: Our neighbour nextdoor is an RN, and so I knew there was good support that way... And my GP is really good if there's an emergency to take a phonecall or slide someone in. [Interview E]</p> <p>Q14: So my co-worker forwarded this to me and she said that the new guidelines recommend releasing patients from hospitals sooner than what might previously have been the case. [Interview D]</p>
<b>Healthcare provider factors</b>		
Healthcare provider communication	Positive experiences of medical counselling and logistical information provision	<p>Q15: I knew what the diagnosis was and I knew that this is what I had to have. So no, I was fine... [Interview A]</p> <p>Q16: I would say to the extent that they were able to, they did. But because it was beginning as an exploratory procedure, I also understood the nature of it... [Interview F]</p> <p>Q17: They obviously gave me a list of guidelines for when to seek help again and so on and sort of what to expect over coming days and so on... There was definitely criteria for taking pain relief. [Interview D]</p>
	Negative experiences of medical counselling and written information provision	<p>Q18: The surgery itself was never explained to me what would be happening. [Interview G]</p> <p>Q19: Absolutely not... I actually phoned about a week before just to say, "Is there nothing else I should know?", and the nurse was short with me and just said, "No. Read your information." [Interview H]</p> <p>Q20: And there was really no deep discussions about what to expect. She also knew, though, that I was a retired OR nurse. [Interview E]</p> <p>Q21: The nurse who was going through that with me, she is supposed to give me a... a patient training document of some kind... she didn't have anything to give me because Alberta Health Services does not have one of these training documents for endometriosis surgery. [Interview G]</p> <p>Q22: Nothing but a 10 page print out that was absolutely contradictory to itself. On one</p>

Table 1 (continued)

Theme	Descriptive codes	Exemplar quotations
	Knowledge of ERAS	<p>page it would say "If you would like to ease your pain have a bath." And then the next page it says, "Do not have a bath til your doctor says you can." [Interview H]</p> <p>Q23: I did not learn that until I called and hunted down some information... I spoke to one person in recovery and I don't think anyone you speak to in recovery should count as an actual conversation... And she did not indicate that it took longer than it should have. She didn't share any information about the severity of my surgery. [Interview H]</p> <p>Q24: ...I can infer the importance of it... I have an understanding that you want to have the best possible chances to promote recovery because that's going to determine how you heal and how you progress moving forward... [Interview F]</p>
Trust in healthcare providers	Professional competency	<p>Q25: (I was) confident in the surgeon. And no I wasn't worried that way at all. No. [Interview A]</p> <p>Q26: I'm fortunate that it's behind me and that it was done well and by some of the best doctors in Alberta. [Interview H]</p> <p>Q27: Everything, especially the nurses I had in the evening and overnight shift, they were good too... they also knew that I could be reactive with the PTSD and were good to interact as gently as they could in that way. [Interview E]</p> <p>Q28: I have a strong feeling, that she thought this was going to be super easy, it'll be the last one before the long weekend. She's not going to find much, and then she just left. [Interview G]</p> <p>Q29: She didn't understand, I was really depressed... she told me that you need to get counselling or whatever. [Interview B]</p> <p>Q30: It was frustrating to start because it took so long to see somebody and be heard and to get in... I was on the wait list and bumped up because... it was decided that... the uterus and fibroids had led to some previous pulmonary embolisms. [Interview H]</p>
	Compassion	
	Delays in care	
<b>Systemic / organizational factors</b>		
COVID-19	Staffing pressures	<p>Q31: There was one nurse I worry about a little bit... She didn't know what some medications were and what they were for... and these, to me... were normal medications that should be known. [Interview E]</p> <p>Q32: I got a student nurse .... He</p>

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Table 1 (continued)

Theme	Descriptive codes	Exemplar quotations
		hadn't read over the post-op instructions or whatever. He had not read the thing. So he read it out loud to me. [Interview B] Q33: It was very busy... I went and asked for a blanket but they were too busy, so I just went and got myself one. It was the pandemic so it was a gong show. [Interview B] Q34: It's a very large open area with just curtains blocking. So you get your kit and you don't know if you're supposed to change... there's no particular person assigned to you... you can hear everyone else's pre-op. [Interview H] Q35: I had to give up my glasses and then get wheeled over to the surgery area and then they put you in this waiting room where you're on the bed and there's a bunch of other people... I couldn't see anything... Another woman was having a panic attack because she couldn't see and she was begging to get her glasses back... you're picking up on other people's anxiety. [Interview D]
Lack of privacy		
Co-ordination of care	Need for urgent surgery	Q36: And was there any particular reason why you didn't try to make changes or it wasn't talked about before surgery or just- There wasn't a lot of time... I had the pre-op visit on the Tuesday and a week from the Thursday I was in the OR. [Interview E] Q37: [ERAS]... I remember in the back of my mind something about it, but everything was so fast, there wasn't a lot of time. [Interview E] Q38: I had only had one appointment with him before he decided that surgery was the best option... it was about 6 months until I got an OR date. [Interview F]
	Care transitions	Q40: I have a lot of food allergies so I get a lot of my medication... Compounded... The physicians read this readout from the pharmacy, it doesn't say the drug... It just says compounded medication [Interview B] Q41: I had to kind of fudge it at home, because I did have a peri bottle at the hospital, but I don't know if it went missing or I didn't pack it. So, I had to order something online to take care of that, because urinating was not a happy thing with all the tears. [Interview E] Q42: You want to go home and be in your own bed and be more comfortable... I did feel extremely weak as we left the unit and started to walk down

Table 1 (continued)

Theme	Descriptive codes	Exemplar quotations
		the hall, then I almost passed out... [Interview D] Q43: It was a very quiet unit at that time, but I was definitely rushed out the door with a puke bag to go home in rush hour traffic for an hour drive... I believe that I should have been kept overnight... I know that comes with its own risk of infection and COVID... but considering the length of my surgery and the pain I was in and the confusion I was experiencing from the stress and the pain... I should absolutely have been kept until I could eat, until I could have a bowel movement... The surgery didn't reflect my aftercare at all. [Interview H] Q44: So I kind of got it [details of surgery] three fold. I got it from the surgeon directly after my surgery as part of his debrief of what he found, and then I got it from the resident when we had our conversation, and she gave me the surgery specific discharge package specific to gynaecology. And then, when I was discharged, the nurses gave me some additional, just kind of general post-op information along with verbal instructions. [Interview F]

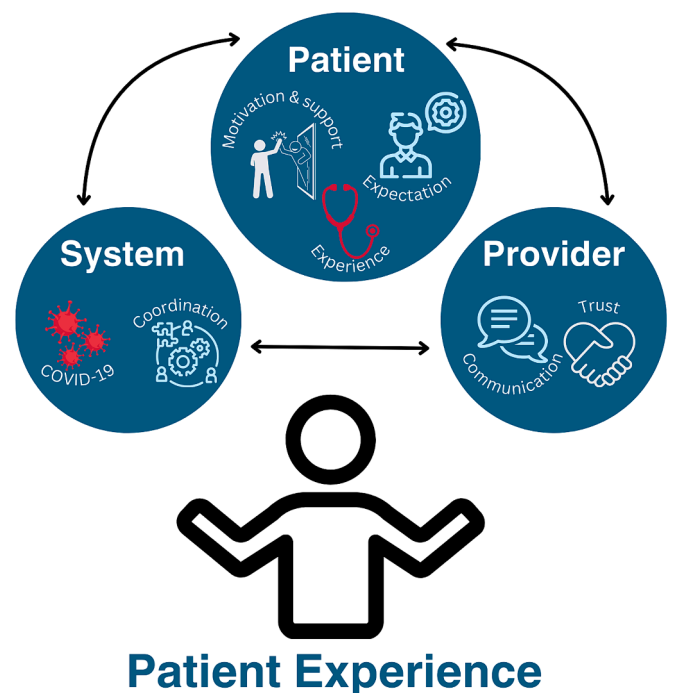


Fig. 1. Schematic representation of six core themes and key relationships.

3.5. Healthcare provider communication

Participant-reported sources and forms of information provision from healthcare providers are summarised in Table 2. Participants

**Table 2**  
Participant reported sources and forms of pre-operative and post-operative information provision.

	<i>Information provision pre-operatively</i>			<i>Information provision post-operatively</i>		
	<i>Verbal pre-operative instructions</i>	<i>Pre-admission clinic</i>	<i>Written information</i>	<i>Post-operative medical review</i>	<i>Day-case versus inpatient management</i>	<i>Written information</i>
A	Unclear recollection, possibly from nurse	No	From nurse	Surgical review with dietic and pharmacy input	Inpatient	From nurse
B	Basic pre-operative counselling from doctor	Yes	From doctor	NS	Day-case	From nurse
C	Telephone consultation with doctor discussed pre-operative preparation	Yes	From pre-admission clinic	NS	Day-case	From nurse
D	Minimal information from doctor	Yes	From pre-admission clinic	NS	Day-case	From nurse
E	Basic pre-operative counselling from doctor	Yes	No	Surgical review	Inpatient	From doctor
F	Basic pre-operative counselling from doctor	Yes	From pre-admission clinic	Surgical review	Inpatient	From doctor and nurse
G	Minimal information from doctor	Yes	From pre-admission clinic	Nursing review only	Day-case	From nurse
H	Minimal information from doctor	No	Via post	Nursing review only	Day-case	From nurse

expressed that clear pre-operative counselling improved their understanding of their procedure, reduced stress and resulted in perception of high-quality care [Q15]. In the context of procedures with variable operative course, such as laparoscopic excision of endometriosis, participants felt they understood the procedure but expressed that they were frustrated with the logistics of preparing for surgery [Q16]. Post-operatively, participants generally reported receiving appropriate guidance before discharge [Q17]. This was provided by nursing staff in both verbal and written forms, even in the absence of a surgical review. Participants noted that ERAS recommendations were discussed at these opportunities, reinforcing understanding and empowering management of their recovery in the community.

Opposing this, some participants perceived a lack of medical counselling pre-operatively and reported they did not feel prepared for surgery, with limited understanding of their procedure [Q18]. Some participants highlighted that they had difficulty obtaining instructions to prepare for surgery. Instead, there was a focus on pre-operative logistics, which some perceived to be due to presumed pre-existing knowledge or inadequate availability of relevant written information [Q19,20,21,22]. In the post-operative phase, day surgery cases often reported lack of surgical review before discharge. Subsequently, extensive efforts were required by the participant to obtain details of the surgical events, including unexpected findings and complications [Q23]. This impacted the participant’s trust in the healthcare system and healthcare providers, generating feelings of distrust and vulnerability.

Few participants were aware of the term ERAS specifically. Three participants described familiarity with the term as a direct result of interaction with healthcare professionals; following discussion with their nurse or in written documentation, and in one case, casual conversation whilst being transferred to the operating theatre. Overall, awareness of the term ERAS was coupled with understanding of the importance of ERAS [Q24].

### 3.6. Trust in healthcare providers

Trust in healthcare providers is underpinned by the quality of communication, compassion and perceived competency of the healthcare professional. Participants expressed that positive manifestations of these attributes created confidence which made them more likely to adhere to the recommendations of the healthcare providers. Participants expressed gratitude towards healthcare professionals following complex surgery, as well as nursing staff, recognising their pressures but acknowledging the consideration and respect with which they were treated [Q25,26,27].

Conversely, when there was a perceived lack of empathy, absence of active listening and inappropriate attribution of symptoms to psychological issues there were feelings of distrust [Q28,29]. This often resulted in rejection of advice provided by healthcare providers.

Participants who reported delays in obtaining a diagnosis due to dismissal from healthcare professionals demonstrated irritation and anxiety [Q30]. Whilst this negatively impacted trust in healthcare professionals, motivation to prepare for surgery and follow ERAS recommendations was generally maintained.

### 3.7. COVID-19

The majority of surgeries took place during the peak of the COVID-19 pandemic or immediately following (n = 6). Staffing shortages and subsequent reliance on less experienced members of the healthcare team were frequently noted [Q31,32]. Participants appreciated the nursing staff, especially amongst the chaotic environment in which they were working, but reported that they were frustrated and annoyed that this affected the standard of care they received. Staffing pressures resulted in feelings of confusion, ambiguity or a perceived lack of support particularly related to pre-operative instructions and the physical journey to the operating theatre. Participants also reported taking personal steps to ensure pre-operative ERAS components were completed when nursing staff were unable to do so; for instance, getting a blanket from storage [Q33]. This, combined with lack of privacy, caused substantial anxiety in the immediate pre-operative stage [Q34,35].

### 3.8. Co-ordination of care

Multiple challenges to care co-ordination were referenced by participants, including the need for urgent surgery and transitions in care between the community and tertiary care. Perception of effective care co-ordination was viewed as essential to optimise the patient surgical experience.

Participants requiring urgent surgery reported distress due to the reduced time available to understand the surgery proposed, the role of ERAS, as well as limited opportunity to physically prepare [Q36,37]. Reduced healthcare worker contacts pre-operatively restricted opportunities to develop the doctor-patient relationship or establish pre-operative expectations and resulted in negative pre-operative experiences [Q38]. This opposed participants who had time to develop trust with their healthcare providers.

Difficulties during transitions in care were also reported, including obtaining information from third parties, such as pharmacies and co-ordinating day-case management. Several participants described discharge late in the evening which led to feelings of being rushed out of the hospital and difficulty obtaining the required analgesia or equipment for recovery at home [Q39,40,41,42]. Some participants were unable to recall a surgical review and described feelings of confusion and frustration at discharge [Q42]. Despite this, most participants demonstrated objective evidence of readiness for discharge from hospital, describing adequate pain control, mobility, oral intake and

voiding. Cases involving an overnight admission and surgical review the following day reported increased confidence and preference for recovery at home, with reinforced provision of information [Q43].

3.9. Recommendations for change

Most participants provided practical recommendations that would enhance their experience of ERAS-guided surgery (n = 6). Few participants were completely satisfied with their care and did not identify areas for improvement (n = 2). Exemplar quotations are summarised in Table 3.

Healthcare provider communication and care co-ordination were repeatedly cited as areas for improvement. In particular, addressing gaps in patient education by ensuring the availability of relevant written information and supporting this with pre-operative counselling tailored to the needs of the participant was emphasised [Q44,45]. Optimizing the use of multidisciplinary team members such as registered nurses or nursing assistants was suggested as means of achieving this [Q46]. In the post-operative phase, participants highlighted the need to consider the ability of the patient to understand and retain the information conveyed to them. For example, discussing operative findings at point of discharge as opposed to the intensive care unit or the recovery room [Q47].

Participants frequently discussed the need to streamline transitions in care, particularly at point of admission to and discharge from hospital [Q48]. However, logistical examples of how to achieve this were not provided. Several participants proposed a role for follow up text messages or phone calls once discharged to the community as a source of reassurance, point of contact for non-emergency medical queries and

enhancing the discharge process overall [Q49].

4. Discussion

Our analysis has shown that participants' experiences of ERAS-guided gynecologic surgery was shaped by patient, healthcare provider and systemic factors, which were at times interconnected. Expectations were set by previous experience of the healthcare system, either in a professional role or due to having previous surgery, as well as information provided by healthcare professionals. Participants reported favourable perspectives when expectations aligned with physical experience of ERAS-guided surgery, followed by receipt of high quality-care. Furthering the quality, relevance and availability of information provided by healthcare professionals, in combination with establishment of accessible follow up strategies, was suggested by participants to optimise their overall experience of ERAS-guided surgery.

This study is the first qualitative study exploring the experiences, including potential benefits, of ERAS-guided gynecologic/oncology surgeries from a patient perspective in Canada. Previous qualitative studies have identified patient empowerment, by meeting information needs and facilitating active participation in their care, as key to enhance the patient experience of ERAS guided surgery and in turn, compliance (Wang et al., 2023; Rydmark Kersley and Berterö, 2021; Phillips et al., 2019; Wagner et al., 2005; Archer et al., 2014; Blazebly et al., 2010; Bernard and Foss, 2014; Aasa et al., 2013; Lithner et al., 2012; Gillis et al., 2017; Poland et al., 2017; Gillis et al., 2021).

Our study highlighted several gaps in patient education. Only three participants recalled being made aware of the term ERAS. Given that understanding the rationale behind ERAS motivates patients to adhere to ERAS recommendations (Rydmark Kersley and Berterö, 2021; Phillips et al., 2019; Wagner et al., 2005), prioritizing patient education is paramount to improve compliance. Furthermore, education about ERAS and its underlying mechanisms of action is particularly important since ERAS recommendations sometimes differs from traditional surgical treatment programs and patient understanding about recovery (Wang et al., 2023; Archer et al., 2014; Gillis et al., 2019). Along this vein, our study found that patients expressed increased confidence at discharge following an overnight stay, which directly opposes ERAS guidelines encouraging same-day discharge, reinforcing the need to educate patients of the evidence base behind ERAS, to challenge traditional beliefs surrounding post-surgical care. Using a variety of modes and members of the multidisciplinary team to educate patients allows specialist input and reinforces key messages (Archer et al., 2014; Poland et al., 2017; Lovely et al., 2019). As our participants suggested, careful reallocation of job roles could establish specialty nurse-led ERAS clinics or clinical pharmacist-led discharge pathways (Wagner et al., 2005; Lovely et al., 2019). These strategies would ensure healthcare professionals with sufficient knowledge of ERAS were providing patient education or facilitating their discharge, whilst reducing the burden on surgeons and surgical nurses, yet increasing patient confidence in same day discharge. As well as ensuring relevance and eliminating inconsistencies in written information provided, initiatives such as digital applications or peer support programmes could facilitate access to unbiased information, challenge traditional peri-operative practice and enable self-management (Rydmark Kersley and Berterö, 2021; Gillis et al., 2017; Beesoon et al., 2023).

The need for further education is not limited to patients. We have demonstrated that care providers in the community are key motivators in the preparation for and recovery from surgery. Therefore, ensuring key members of the support network have the understanding required to enable care in the community, supporting ERAS guidelines, both mentally and physically is vital (Wang et al., 2023; Gillis et al., 2017; Poland et al., 2017). Establishing telephone follow up clinics to bridge the gap in communication following transition to the community (Wang et al., 2023; Archer et al., 2014; Blazebly et al., 2010; Bernard and Foss, 2014; Gillis et al., 2017), would communicate surgical details and

Table 3  
Quotations illustrating recommendations for change.

Theme	Descriptive codes	Exemplar quotations
Recommendations for change	Patient education	Q44: Well, specifically that training document. A pre-surgical training document for a patient going through surgery for endometriosis [Interview G] Q45: I think maybe being told more specifically about the kind of pain I could expect...I ended up calling my surgeons clinic to talk to a nurse and being like, "What's wrong? I'm worried" [Interview F] Q46: So the experience leading up to it, some things that either a liaison, I'm not saying that the surgeons and specialists need to hold people's hands, but nurses or RNAs or LPNs or somebody needs to communicate with patients what's going to happen, what your day's going to look like, where you're going to be going, other than just a handout. [Interview H] Q47: ...I really wish that a doctor would've come to me maybe a couple of hours later, opposed to immediately after my surgery, to tell me what happened [Interview G]
	Streamlining care	Q48: So they [are] telling everyone to be there at the same time. They say, "Okay, be here at 5:00AM." Well, there's 30 other people that show up at the same time...so you haven't eaten, you haven't slept, you're freaking out. And now you're sitting in a waiting room with a bunch of other people who are also in the same boat. [Interview H] Q49: I guess maybe for reassurance, if there would be the possibility to have someone text my husband in the evening of discharge or the next day or something just to be like, "Oh, hey, how's it going? Do you have any questions?" [Interview D]

establish ongoing management plans would enable carers to feel supported. Healthcare providers must also have the appropriate knowledge to guide patients effectively through their surgery, adequately explaining the scientific basis behind ERAS, avoiding the use of the term 'hospital policy' to justify adherence (Rydmark Kersley and Berterö, 2021; Rosyidah et al., 2022). Qualitative exploration of ERAS-guided gynaecological surgery from a health-care provider perspective would provide further valuable data.

The need to personalize and tailor education about ERAS, acknowledging individual expertise and desired level of engagement, is important and has been found to optimise the patient experience of enhanced recovery programs (Wang et al., 2023; Rydmark Kersley and Berterö, 2021; Aasa et al., 2013; Gillis et al., 2017; Poland et al., 2017; Gillis et al., 2021). Our study highlighted the importance of this, and the challenges with making assumptions based on levels of individual knowledge, understanding and compliance with ERAS recommendations despite similar previous healthcare experiences, both occupational and as a patient. This demonstrates we cannot categorize patients presuming the degree of education they require. Two-way communication is key to ascertain the patient's baseline level of knowledge and unique parameters impacting their self-care ability, such as support at home, to generate a personalized treatment plan (Wang et al., 2023; Rydmark Kersley and Berterö, 2021; Aasa et al., 2013; Gillis et al., 2017; Poland et al., 2017; Gillis et al., 2021). It is during this process of engagement that patients report feeling empowered to be active participants in their care (Rydmark Kersley and Berterö, 2021).

Whilst we acknowledge that both patient and carer engagement with personalised care from health-care professionals are central to improving patient experience of ERAS-guided surgery, positive experiences cannot be received without delivery of high-quality care. Our study highlights several systemic considerations, all of which require investment to improve ERAS-guided surgery from the patient's viewpoint; resource constraints, staffing shortages and delayed care, all exacerbated by COVID-19 (Jaworska et al., 2023; Sauro et al., 2023). Whilst systemic improvements require significant financial investment and time before intervention effect can be observed (Urbach and Martin, 2020; Kasivisvanathan et al., 2021; Ljungqvist et al., 2020), focusing on education and empowerment of patients is largely achievable with small modifications of practice.

Our study specifically examines the patient perspective of ERAS-guided gynecologic/oncology surgery in the largest publicly funded healthcare provider in North America, during the post COVID-19 era. It is in this context that enhanced recovery pathways are most valuable, promoting efficiency, acting as a guide for best practice yet requiring constant adaptation in line with healthcare demands (Stone and Scheib, 2021).

## 5. Limitations

While we used a methodological framework that aligned with our objective, and adhered to standards of rigour for qualitative studies, our findings should be interpreted within the limits of our methods. Participants were recruited in a single province, with most surgeries occurring during the COVID-19 pandemic or the immediate recovery period; transferability of the findings should consider this context. Importantly, half of our participants were current or retired nurses, which likely influenced their awareness of ERAS and ERAS-guided surgeries. Some participants were recruited from the unit in which the surgical lead for ERAS in the province works clinically. Compliance with ERAS is likely to have been higher in this institution. All participants interviewed underwent laparoscopic surgery, thus experiences in participants who underwent open or complex cytoreductive surgery were not considered, limiting the diversity of perspectives and experiences.

## 6. Conclusion

Participant experience of ERAS-guided gynecological surgery was moulded by individual, healthcare provider and systemic factors. Previous experience with healthcare and information provided by healthcare professionals shaped expectations. Targeting patient education and empowerment by providing accessible, relevant information in combination with robust follow up pathways could significantly improve the patient experience of ERAS-guided surgery. The findings of this study will be used to inform interventions such as peer support programs, digital application systems or telephone follow up services to improve patient education about ERAS and ERAS compliance. Additional work by our group exploring the association between ERAS compliance and patient outcomes and barriers to implementing ERAS identified by healthcare providers, will be used along with the findings of this study to develop an implementation strategy to improve ERAS compliance. Future work is needed to examine the effectiveness of these strategies and interventions for improving ERAS compliance and the patient experience.

## CRedit authorship contribution statement

**Emma Sian Jenkins:** Writing – original draft, Formal analysis, Data curation, Conceptualization. **Rachel Crooks:** Writing – review & editing, Formal analysis, Data curation, Conceptualization. **Khara Sauro:** Writing – review & editing, Supervision, Formal analysis, Data curation, Conceptualization. **Gregg Nelson:** Writing – review & editing, Methodology, Formal analysis, Conceptualization.

## Declaration of competing interest

Dr. Nelson declares personal fees from Pfizer, Astrazeneca and Smith & Nephew outside the submitted work and Co-Chair of Enhanced Recovery Canada. There are no other conflicts of interest to declare.

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## Appendix A. Supplementary material

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.gore.2024.101510>.

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