Enhanced recovery after surgery (ERAS) is an evidence based perioperative protocol that has been successfully introduced into several surgical disciplines over the last decade. The ERAS protocol addresses the following phases of patient care: preadmission, preoperative, intraoperative, and postoperative. A multidisciplinary care team is required to address the complex health care needs of patients recovering from oncologic surgical procedures. A patient centered approach is also key to ensure patients have timely access to the health care resources and information they need to successful recovery from treatment. The key elements of ERAS focus on the following: comprehensive patient education, preservation of gastrointestinal function, reduction in organ dysfunction, active pain management, and early ambulation. Cytoreduction (CRS) and Hyperthermic Intraperitoneal Chemotherapy (HIPEC) has been effectively used to treat patients diagnosed with advanced abdominal cancers. Patients diagnosed with primary tumors originated in the appendix, colon, ovary, stomach, and pancreas have been treated with HIPEC at this academic center. Careful patient selection and staging of disease is important to ensure patients will actually benefit from the HIPEC procedure. This surgical procedure is often associated with a prolonged recovery period and increased risk for hospital readmission due to postoperative complications. An interprofessional team worked together to develop a comprehensive perioperative ERAS protocol for patient undergoing CRS and HIPEC at an academic center. A clinical pathway, electronic orders sets, education booklets, and education videos were developed as a result of this protocol. This development process was completed after nearly two years of ongoing collaboration of the various disciplines involved in patient care and culminated with the final approvals from the internal review committees within the healthcare organization. Patients preparing for this advanced surgical procedure will now have access to a comprehensive educational experience and support team to better prepare them for the challenges of recovering from CRS and HIPEC.
an advanced surgical procedure designed to manage advanced disease. Interprofessional collaboration was utilized to successfully develop an enhanced recovery after surgery programs in surgical oncology.

**Content Outline:**

I. Enhanced Recovery After Surgery (ERAS)

A. Evidence-based perioperative protocol
   1. Preadmission
   2. Preoperative
   3. Intraoperative
   4. Postoperative

B. Multidisciplinary Care Team
   1. Surgeons
   2. Anesthesiologist
   3. ERAS coordinator
   4. Nursing staff
   5. Dietician
   6. Physical therapist

C. Active Patient Involvement
   1. Preoperative counseling
   2. Preoperative patient education
   3. Establish open network of communication

D. Key Elements of ERAS
   1. Comprehensive patient education
   2. Preservation gastrointestinal function
   3. Reduction in organ dysfunction
   4. Active pain management
   5. Early ambulation
II. Cytoreduction (CRS) & Hyperthermic Intraperitoneal chemotherapy (HIPEC)

A. Patient selection

1. Site of primary tumor
   a. Appendix
   b. Colon
   c. Ovarian
   d. Gastric
   e. Mesothelioma
   f. Unknown Origin

2. Clinical Staging
   a. Diagnostic imaging
   b. Pathology review

B. Surgical Procedures

1. CRS Procedure
   a. Removal of visible disease
   b. Peritoneal Cancer Index (PCI)
   c. Completeness of Cytoreduction (CC) score

2. HIPEC
   a. Treatment for microscopic tumor cells
   b. Infusion of heated chemotherapy in abdomen
   c. Reconstruction

C. Extended Recovery

1. Decreased GI motility
   a. Altered absorption
   b. Weight loss
c. Bowel changes

2. Decreased activity tolerance
   a. Anxiety
   b. Fatigue
   c. Postoperative pain

III. Interprofessional Collaboration

A. Committee Review
   1. Quality Improvement
      a. Approval of ERAS clinical pathway
   2. Clinical Practice
      a. Approval of electronic order sets
   3. Patient Education
      a. Approval of education booklets
      b. Distribution of education videos

B. Surgical Oncologist
   1. Program director
   2. Patient selection
   3. Determines surgical team

C. Advanced Practice Provider
   1. Program coordinator
   2. Patient screening
   3. Patient optimization
   4. Patient education
   5. Perioperative patient care

D. Medical Oncologist
1. Patient referrals for possible surgery
2. Completion of HIPEC order sets
3. Adjuvant therapy

E. Pharmacist
1. Contributes to development of computer order sets
2. Processes orders for HIPEC
3. Dispense chemotherapy for OR case

F. Anesthesiologist
1. Preoperative evaluation
2. Epidural placement
3. Medication administration
4. Fluid replacement

G. Perfusionist
1. Setup of closed system
2. Heated chemotherapy administration

H. Nursing Staff
1. Perioperative patient care
2. Patient education

I. Consultations
1. Preoperative evaluation center
2. Ostomy nurse
3. Dietician
4. Physical therapy
5. Occupational therapy
6. Social worker
7. Acute pain service

IV. ERAS Protocol for HIPEC

A. ERAS Clinical Pathway

1. Preoperative
2. Intraoperative
3. Postoperative

B. Order Sets

1. Preadmission
   a. GI bowel prep
   b. Skin prep
   c. Preoperative oral hydration

2. Chemotherapy
   a. HIPEC dose calculation
   b. Premedication
   c. Chemotherapy treatment plan

3. Perioperative patient care
   a. Laboratory tests
   b. Medications
   c. Nursing care
   d. Activity
   e. Nutrition
   f. Consultations

C. Patient Education

1. Medications
2. Nutrition
3. Activity

4. Pain control

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**Author Summary:** Dr. Brenda Smith-Nettles has a long, storied career in nursing. Her latest career move is as an Acute Care Nurse Practitioner at the Johns Hopkins School of Medicine, where she has been for the last 10 years.