Background
• Cancer is the 2nd leading cause of death worldwide.
• In 2021, 1.9 million new cancer cases are expected in US.
• Hypersensitivity reactions occur in about 5% of patients receiving cancer treatment; 1-3% progress to life threatening anaphylaxis.
• There remains no standard guidelines for the assessment and management of hypersensitivity reactions.
• Provider knowledge gaps and practice variations in hypersensitivity care leads to increased patient distress, symptom prolongation, acuity escalations, and mortality risk.

Purpose and Aims
This quality improvement project evaluated whether a comprehensive symptom-based order set and practice guidelines would improve hypersensitivity management.
Aims:
1) Determine whether knowledge scores of direct care staff increase with hypersensitivity education
2) Evaluate whether the use of the hypersensitivity management practice guidelines and enhanced order set decreases the time to hypersensitivity reversal medication administration.
3) Evaluate staff satisfaction of project interventions.

Interventions
Hypersensitivity education was based on education and guidelines by the Oncology Nursing Society.
• Staff knowledge was evaluated through adapting the Drug Allergy Knowledge Survey and Asia Pacific Allergy Survey to convey oncology specific scenarios.
Site specific practice guidelines and order set were approved through multidisciplinary collaboration and stakeholder review.

Reversal medications included in the order set:
• Diphenhydramine
• Famotidine
• Corticosteroids
• Epiinephrine

Patient chart reviews of each hypersensitivity occurrence evaluated reaction time, presenting symptoms, time to reversal medication administration, and symptom resolution time.

Data Analysis
Aim 1: Survey scores were calculated using a percent of correct response. The individual scores were collated into a mean group score, then compared using a paired t-test.

Aim 2: Time indicators of reaction occurrence, medication administration, and symptom resolution were compared pre- and post-intervention. A Mann-Whitney U test was used to determine statistical significance.

Aim 3: Descriptive statistics, including mean and categorical rating, were used to describe survey responses.

Results and Limitations
• Mean knowledge scores showed statistical significance, increasing from 65.5% to 88.24% (p <0.004).
• Statistical and clinical significance were found, improving administration times for Famotidine (p<0.038) and Corticosteroid (p<0.039) as well as symptom resolution (p<0.023).
• Overall, staff were satisfied with project interventions.

Limitations: coronavirus pandemic (e.g., frequent changes, change fatigue), project site work stoppage, limited project timeline, and one unit site selection.

Future Implications
• There remains no standard guidelines for hypersensitivity management, however, organizations have an obligation to support providers in clinical decision making and align with evidence-based practice.
• The project outcomes are consistent with the literature showing focused education, order set protocol adoption, and practice guidelines can produce reduction in time to intervention, increased patient safety, and enhanced quality care.
• While Epinephrine administration was not observed in this project, staff communicated discomfort with administration. Additional training and standardized protocol usage can be applied to improve staff ability and confidence utilizing this life saving medication.