Measure Title: Percentage of Patients who Died with Cancer Receiving Systemic Cancer-Directed Therapy in the Last 14 / 30 Days of Life *(lower score – better)*	
Measure Description:	(1) Percentage of patients, aged 18 years and older, who died with cancer receiving systemic cancer-directed therapy in the last 14 days of life (2) Percentage of patients, aged 18 years and older, who died with cancer receiving systemic cancer-directed therapy in the last 30 days of life
Denominator	Patients, aged 18 years and older, who died with cancer **Denominator Criteria (Eligible Cases):** 1) Patients aged ≥ 18 years at the start of the measurement period: (Start Date of the Measurement Period minus Date of Birth) ≥ 18 years **AND** 2) At least two outpatient encounters that meet the following criteria: 2a) Place of Service: 02, 05, 07, 10, 11, 19, 22, 49, 50, 71, 72 **AND** 2b) Professional Service code: 98000, 98001, 98002, 98003, 98004, 98005, 98006, 98007, 98008, 98009, 98010, 98011, 98012, 98013, 98014, 98015, 99202, 99203, 99204, 99205, 99212, 99213, 99214, 99215, 99242, 99243, 99244, 99245, 99495, 99496, 99441, 99442, 99443 *(NOTE: Encounters coded with telehealth modifier GQ, GT, or 95 are allowed for both visits.)* **AND** 2c) Service Date <during Measurement Period> **AND** 2d) Diagnosis code for Cancer *(See tab "CancerDx" in "EOLMeasures_Coding" file)* **AND** 3) Date of death <during Measurement Period> **Guidance:** For physician/group reporting, attribution of patients to an oncology practice is based on the presence of at least two outpatient visit claims for the patient with that practice. The two outpatient encounters required in the denominator are outpatient visits that occur on different calendar days. To be eligible in the denominator, patients must have continuous coverage during the measurement period. A cancer diagnosis code must appear within the top 3 diagnosis positions on an outpatient visit claim that meets the denominator encounter requirement.
Denominator Exclusions:	None
Numerator:	(1) Patients who received systemic cancer-directed therapy in the last 14 days of life (2) Patients who received systemic cancer-directed therapy in the last 30 days of life

Guidance:
The measure includes intramuscular, intravenous, oral, and subcutaneous routes of administration of systemic cancer-directed therapy. Oral systemic cancer-directed therapy is oral prescription of extension of same oral drug or prescription of new oral drug.

Definition:
Systemic Cancer-Directed Therapy
Includes:
- Cytotoxic chemotherapy
- Drugs and biologics which activate or inhibit the hallmarks of cancer (e.g., kinase inhibitors)

Excludes:
- Hormones and hormone antagonists
- Red Blood Cell (RBC) growth factors used to treat chemotherapy-induced anemia
- White Blood Cell (WBC) growth factors used to treat chemotherapy-induced neutropenia
- Bisphosphonates and biologics used to treat osteopenia or osteoporosis
- Antiemetics and antinauseants
- Pain medications

Example:
Drugs and biologics under the World Health Organization's (WHO) Anatomical Therapeutic Chemical (ATC) classification "Antineoplastic Agents" and select "Immunostimulants" and "Immunosuppressants".

"Antineoplastic and Immunomodulating Agents" Drug Classes and Identifiers:
NOTE: To find the drug members under each class, go to https://mor.nlm.nih.gov/RxClass/ and enter the class name or ID on the "Search" field of the RxClass browser.

Antineoplastic Agents
- Alkylating agents (id: L01A)
- Antimetabolites (id: L01B)
- Cytotoxic antibiotics and related substances (id: L01D)
- Monoclonal antibodies and antibody drug conjugates (id: L01F)
- Other antineoplastic agents (id: L01X)
- Plant alkaloids and other natural products (id: L01C)
- Protein kinase inhibitors (id: L01E)
  - *Exclude: Cyclin-dependent kinase (CDK) inhibitors (id: L01EF)*

Immunostimulants *(Includes only those that apply to cancer)*
- Interferons (id: L03AB)
  - Include only: interferon alfa-2b, ropeginterferon alfa-2b, and ropeginterferon alfa-2b-njft
- Interleukins (id: L03AC)
  - Include only: aldesleukin
- Other immunostimulants (id: L03AX)
  - Include only: sipuleucel-T

Immunosuppressants *(Includes only those that apply to cancer)*
- Selective immunosupressants (id: L04AA)
  - Include only: alemtuzumab, everolimus, and sirolimus
- Other immunosuppressants (id: L04AX)
  - Include only: lenalidomide, pomalidomide, and thalidomide

	NOTE*:* For the purposes of the measure, only medications approved by the United States Food and Drug Administration (FDA) qualify for the measure. **Numerator Criteria:** Systemic cancer-directed therapy Administration: Systemic cancer-directed therapy Encounter code (ICD-10-CM): Z51.11- Encounter for antineoplastic chemotherapy Z51.12- Encounter for antineoplastic immunotherapy **OR** Systemic cancer-directed therapy administration Procedure code (CPT, HCPCS and ICD-10-PCS) *(See tab "SystemicCancerDirectedTx_Proc" in "EOLMeasures_Coding" file*) **OR** Systemic cancer-directed therapy Administration Revenue code: 0331- Chemotherapy administration, injected 0332 - Chemotherapy administration - oral 0335- Chemotherapy administration, IV **OR** Systemic cancer-directed therapy (oral medications) (NDC – National Drug Codes) *(See tab "SystemicCancerDirectTxOral" in "EOLMeasures_Coding" file)* **AND** ***Most Recent*** Systemic cancer-directed therapy Administration Date or Date Filled **AND** (Date of death minus ***Most Recent*** Systemic cancer-directed therapy Administration Date or Date Filled) < 14 days / 30 days
Denominator Exceptions:	Patients received systemic cancer-directed therapy due to 1) receipt or in process of receipt of bone marrow or peripheral blood stem cell transplant (transplant status) in the last 60 days of life, or 2) receipt or in process of receipt of CAR T cell therapy in the last 60 days of life **NOTE:** Patients typically given bridging chemotherapy and other cancer-directed therapies while awaiting transplant or CAR T cell therapy. **Denominator Exceptions Criteria:** Receipt or in process of receipt of bone marrow or peripheral blood stem cell transplant Code: *(See tab "BoneMarrowStemCellTransplant" in "EOLMeasures_Coding" file)* **AND** Service/Procedure Date or Claim from Date (for ICD-10-CM transplant status code) **AND** (Date of death minus Service/Procedure Date or Claim from Date) < 60 days **OR** Receipt or in process of receipt of CAR T cell therapy Code: *(See tab "CARTCellTx" in "EOLMeasures_Coding" file)* **AND** Service/Procedure Date **AND** (Date of death minus Service/Procedure Date) < 60 days

Numerator Exclusion	Patients given hydroxyurea or BTK inhibitors. **NOTE:** Hydroxyurea and BTK inhibitors may be inappropriate to withdraw at the end of life and/or are used for palliative purposes. **Numerator Exclusion Criteria:** Receipt of hydroxyurea or BTK inhibitors Code: *(See tab "HydroxyureaBTKInhibitors" in "EOLMeasures_Coding" file)* **AND** ***Most Recent*** Date Filled **AND** (Date of death minus ***Most Recent*** Date Filled) < 14 days / 30 days
Interpretation of Score:	Better quality is associated with a lower score
Risk Adjustment:	None