

Key Performance Indicators

Overview- Key performance indicators aimed at enhancing oncology-specific quality of care are categorized as clinical, operational, and financial, available as data dashboards for senior leadership and clinicians to monitor performance. EMR vendors can integrate these KPIs into their systems as enhancement features. A curated list of 12 KPIs spanning across the continuum of patients' journey in the hospital. Each indicator is characterized by a detailed numerator, denominator, formula, and clear inclusion and exclusion criteria.

| # | KPI | Indicator Brief | Formula | Numerator | Denominator | Inclusion Criteria | Exclusion Criteria | Dimensions |
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| 1 | Demographic Information | a) Age distribution: The age range of individuals diagnosed with cancer. b) Gender distribution: The distribution of cancer cases by gender c) Geographic distribution: The distribution of cancer cases by geographic location. | Proportion of Cases in Specific Demographic Group = $\frac{\text{Number of Cases in Specific Group}}{\text{Total Number of Cases}} * 100$ | Number of cancer cases in specific demographic categories (e.g., age groups, gender). | Total number of cancer cases | All individuals with a confirmed cancer diagnosis | None (all demographic categories are included). | Demographic- Gender/Age Category/Geographic distribution/ Co- morbidities/ Substance Abuse |
| 2 | Cancer Case Load | Number of diagnosed Cancer | (Number of P rovisionally | Number of provisionally | Total number of individuals | | None | Demographic- Gender/Age |

| | | cases within a specific timeframe. | Classified Cancer Cases / Total number of individuals screened)* 100 | classified Cancer cases at first registration during a specified period | screened by the cancer department/hospital during the same period. | | | Category/Geographic distribution/ Co-morbidities/ Substance Abuse Disease related Factors -Stage/ Site/ Sub site |
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| 3 | Cancer Surgery Load | Percentage of Cancer surgeries performed within a specific timeframe. | (Number of Cancer surgeries performed/ Total Number of Patients advised for Cancer surgery) ×100 | The number of Cancer surgeries performed during a specified period | The total number of patients advised for Cancer surgery | All Cancer patients who underwent surgery | Patients not advised surgery | Demographic - Gender/Age Category/Geographic distribution/ Co-morbidities/ Substance Abuse Disease related Factors -Stage/ Site/ Sub site Treatment related - Name of the procedure/ Case Status (Minor/Elective/Emergency/Re-Exploration) |
| 4a | Mortality Rate- In-hospital | The number of deaths in the hospital due to Cancer in a specific | Count of individuals who have died in IPD due to Cancer | The total number of deaths in IPD attributed to Cancer within a specific | The total population at risk or under consideration for Cancer mortality | All individuals within the defined population whose death | Out of hospital Deaths | Demographic - Gender/Age Category/Geographic distribution/ Co-morbidities/ Substance Abuse |

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| | | population over a defined period. | | population over a defined period. | within the same defined period. | is recorded in IPD and cause of death is attributed to Cancer during the specified period. | | Disease related Factors -Stage/ Site/ Sub site |
| 4b | Mortality Rate- Out of hospital | The number of deaths out of hospital due to Cancer in a specific population over a defined period. | Count of individuals who have died out of hospital. | The total number of out of hospital deaths attributed to Cancer within a specific population over a defined period. | The total population at risk or under consideration for Cancer mortality within the same defined period. | All individuals within the defined population who have died out of hospital and the cause of death is attributed to Cancer during the specified period. | In-hospital Deaths | Demographic - Gender/Age Category/Geographic distribution/ Co-morbidities/ Substance Abuse Disease related Factors -Stage/ Site/ Sub site |
| 5 | Stage at diagnosis | Distribution of Cancer Cases by relevant Stage at Final Diagnosis | (Number of Cases at Each Stage/Total Number of Final Diagnosis) | The number of Cancer cases at each relevant stage at the | The total number of Cancer cases diagnosed during | All individuals diagnosed with Cancer | All individuals not diagnosed with Cancer | Demographic - Gender/Age Category/Geographic distribution/ Co- |

| | | | ally Diagnosed C ancer Cases)×100 | time of final diagnosis | the specified period. | during the specified period. | during the specified period. | morbidities/ Substance Abuse Disease related Factors- Site/ Sub site |
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| 6 | Chemotherap y completion rates | Percentage of Patients Completing Planned Course of Chemotherapy for Cancer | (Number of P atients Comp leting Chemo therapy/ Total numbe r of Patients planned for Chemoth erapy Treatm ent)×100 | The number of Cancer patients who successfully complete the planned course of chemotherapy. | The total number of Cancer patients for whom chemotherapy was advised as the treatment plan during a specified period. | All Cancer patients for whom chemotherap y was part of the treatment plan. Patients who successfully completed the planned course of chemotherap y within the specified timeframe | Patients for whom the chemotherap y plan was modified due to medical reasons. Patients who opted for an alternative treatment plan after discussion with healthcare providers. | Demographic- Gender/Age Category/Geographic distribution/Co- morbidities/ Substance Abuse Disease related Factors- Stage/ Site/ Sub site Treatment related- Name of Protocol/Intent/Dura tion |
| 7 | Radiation therapy completion rates | Percentage of Patients Completing Prescribed Course of Radiation Therapy for | (Number of P atients Comp leting Radiati on Therapy within planned time | The number of Cancer patients who successfully complete the prescribed | The total number of Cancer patients for whom radiation therapy was advised as the treatment plan | All Cancer patients for whom radiation therapy was part of the | Patients for whom the radiation therapy plan was modified due to | Demographic- Gender/Age Category/Geographic distribution/ Co- morbidities/ Substance Abuse |

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| | | Cancer within prescribed timeframe | /Total Number of Patients with Radiation Therapy Treatment) ×100 | course of radiation therapy. | during a specified period. | treatment plan. Patients who successfully completed the prescribed course of radiation therapy within the specified timeframe | medical reasons. Patients who opted for an alternative treatment plan after discussion with healthcare providers. | Disease related Factors -Stage/ Site/ Sub site Treatment related -Type of treatment (EBRT/Brachy)/ Intent |
| 8a | Timeliness of care | Average Time from Initial Presentation/Screening to Confirmation of Final Cancer Diagnosis | Total Time for All Cases/ Total Number of Diagnosed Cases | The total time (in days or weeks) taken from the initial presentation or screening to the confirmation of Cancer diagnosis for all diagnosed cases during a specific period | Total number of individuals screened by the cancer department/hospital during the same period. | All Final diagnosed Cancer cases. Time measured from the first presentation or screening to the confirmation of diagnosis. | Cases with longer outlier data. | Demographic -Gender/Age Category/Geographic distribution Disease related Factors -Stage/ Site/ Sub site |
| 8b | Timeliness of care | Average Time from Diagnosis to Initiation of Definitive | Total time for all treated cases/total number of treated cases | The total time (in days or weeks) taken from the diagnosis of | The total number of Cancer cases that received definitive | All Cancer cases that received definitive treatment | Cases with missing or unreliable data regarding the | Demographic -Gender/Age Category/Geographic distribution Disease related |

| | | Treatment for Cancer | | Cancer to the initiation of the first definitive treatment (surgery, chemotherapy, or radiation therapy) for all treated cases during a specific period. | treatment during the same period. | during the specified period. Time measured from the confirmation of the diagnosis to the initiation of the first definitive treatment. | time of diagnosis or initiation of treatment. Cases where treatment initiation was delayed for reasons unrelated to the hospital's processes (e.g., patient preference, comorbidities). | Factors -Stage/ Site/ Sub site |
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| 9 | Relapse after surgery | Percentage of patients with primary operable Cancer who developed first recurrence within 5 years after surgery | (Number of Patients with Recurrence/ Total Number of Patients with Primary Operable cancer Surgery) ×100 | The number of patients with primary operable Cancer who developed the first recurrence within 5 years | The total number of patients with primary operable Cancer during the specified period. | All Cancer patients who underwent surgery | Patients with recurrence # Patients with incomplete or unreliable data regarding recurrence | Demographic - Gender/Age Category/Geographic distribution/ Co-morbidities/ Substance Abuse Disease related Factors -Stage/ Site/ Sub site Treatment related - Name of the procedure/ Time to relapse |

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| 10 | Treatment modalities according to clinical extent of disease | <p>Surgery only: Treatment involving surgical procedures alone.</p> <p>Chemotherapy only: Treatment involving chemotherapy alone.</p> <p>Radiotherapy only: Treatment involving radiotherapy alone.</p> <p>S+R: Combined treatment involving surgery and radiotherapy.</p> <p>S+C: Combined treatment involving surgery and chemotherapy.</p> <p>R+C: Combined treatment involving radiotherapy and chemotherapy.</p> <p>S+R+C: Combined treatment</p> | Proportion of Cases by Treatment Modality (Number of Cases in Each Treatment Modality Category / Total Number of Cancer Cases) × 100 | Number of Cases in each treatment modality category | Number of provisionally classified Cancer cases at first registration during a specified period | All individuals with a confirmed diagnosis of cancer. Cases with complete information on treatment modalities used | Cases with missing or incomplete information on treatment modalities | <p>Demographic- Gender/Age Category/Geographic distribution/ Co-morbidities</p> <p>Disease related Factors- Stage/ Site/ Sub site</p> |
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| | | involving surgery, radiotherapy, and chemotherapy. Symptomatic care: Supportive care focused on managing symptoms without curative intent. | | | | | | |
| 11 | Hospital Length of Stay | Average Length of Hospital Stay for Undergoing Surgery or Inpatient Treatments | Total Number of Hospitalization Days /Total Number of Cancer Patients Undergoing Surgery or Inpatient Treatment 0073 | The total number of days cancer patients spend in the hospital for surgery or other inpatient treatments during a specific period. | The total number of cancer patients who underwent surgery or received inpatient treatments during the same period. | All cancer patients who underwent surgery or received inpatient treatments. The length of stay includes the entire duration of the hospitalization related to the surgery or inpatient treatment. | Hospital stays for reasons unrelated to cancer treatment (e.g., treatment of Co-Morbid conditions). Outpatient treatments or procedures that do not require an overnight stay. | Demographic- Gender/Age Category/Geographic distribution/ Co-morbidities Disease related Factors- Stage/ Site/ Sub site Treatment related- Type of treatment(Surgery/ Chemo/Radiation/Others) |

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| 12 | Palliative Care Referral | Percentage of patients referred for palliative care | (Number of patients referred for palliative care/total number of patients with metastatic disease)*100 | Number of patients with Metastatic disease referred for palliative care | Total number of patients with recurrent/relapsed /advanced disease | All individuals diagnosed with metastatic cancer | Specific cases where palliative care may not be appropriate or available. | Demographic- Gender/Age Category/Geographic distribution/ Co-morbidities Disease related Factors- Stage/ Site/ Sub site |
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