Generic indicators for process quality in oncological care

A compendium

Ludwig Boltzmann Institut
Health Technology Assessment

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1 Introduction

LBI-HTA published the report "Quality of care in oncology and its measurement" in 2011 where international efforts in indicator development are discussed. Therein 17 indicator sets for measuring quality in oncological care were presented as examples.

In order to give clinical practice a hands on tool book in the area of cancer care quality indicators, this compendium provides details about generic (i.e. not cancer type specific) process indicators (i.e. not structure or outcome) from this pool of 17 oncological indicator sets.

Table 1 gives an overview of this pool of 17 indicator sets.

Table 1: Pool of indicator sets for this compendium

Source	Country	Content covered by indicator set
KRZYZANOWSKA (2011)	Canada, Ontario	Population-level indicators to measure the quality of cancer care for women
NQF (2009)	USA	National Quality Forum National Voluntary Consensus Standards for Quality of Cancer Care: Breast and Colorectal Cancer, Symptom Management and End-of-Life Care
AHRQ (2011), AHRQ (2009)	USA	Agency for Healthcare Research and Quality National Healthcare Quality Report, Indicators for Breast and Colorectal Cancer
LORENZ (2006)	USA	Agency for Healthcare Research and Quality Cancer Care Quality Measures: Symptoms and End-of-Life Care
PATWARDHAN (2007)	USA	Agency for Healthcare Research and Quality Cancer Care Quality Measures: Diagnosis and Treatment of Colorectal Cancer
MOHER (2004)	USA	Agency for Healthcare Research and Quality Cancer Care Quality Measures: Breast Cancer
MALIN (2006) – Breast cancer	USA	American Society of Clinical Oncology National Initiative for Cancer Care Quality: Breast Cancer
MALIN (2006) – Colorectal cancer	USA	American Society of Clinical Oncology National Initiative for Cancer Care Quality: Colorectal Cancer
ASCO - NCCN (2007)	USA	American Society of Clinical Oncology - National Comprehensive Cancer Network Breast Cancer, Colorectal Cancer
ASCO/ QOPI (2011)	USA	American Society of Clinical Oncology Quality Oncology Practice Initiative: wide range of indicators
AMA/ PCPI (2011)	USA	American Medical Association Physican Consortium for Performance Improvement: wider range of indicators
GREENBERG (2005)	Canada, Ontario	Cancer Care Ontario Cancer Quality Council of Ontario Development of a set of strategy-based system-level cancer care performance indicators
CSQI (2011)	Canada, Ontario	Cancer Quality Council of Ontario Ontario Cancer System Quality Index
NCASP (2011)	England	National Clinical Audit Support Programme: example indicators from the Bowel Cancer Audit 2010
AQUA (2011)	Germany	Institut für angewandte Qualitätsförderung und Forschung im Gesundheitswesen AQUA External inpatient quality assurance: Breast cancer surgery
NPK Monitor (2009)	Netherlands	National Cancer Plan NPK Monitor Card
VLAYEN (2011) – Rectal cancer	Belgium	Belgian Healthcare Knowledge Center KCE Indicators rectal cancer
VLAYEN (2011) – Breast cancer	Belgium	Belgian Healthcare Knowledge Center KCE Indicators breast cancer
VLAYEN (2011) – Testis cancer	Belgium	Belgian Healthcare Knowledge Center KCE Indicators testis cancer
NIP (2011)	Denmark	National Indicator Project Lung Cancer

2 Method and indicator selection

The focus of this compendium lies on processes after a confirmed diagnosis of cancer. Therefore indicators for preventive care including screening are not covered.

Generic process indicators that were found in at least two of the 17 indicator sets are subsequently described in greater detail.

From the indicator pool described in table 1 above, the following indicators qualify as generic (i.e. not cancer type specific) for process quality.

Krzyzanowska (2011)

Population-level indicators to measure the quality of cancer care for women selected for evaluation by expert panel

Category	No.	Indicator name	Definition
Waiting time	3.	Wait times for surgery (breast, colon, ovary, uterus and cervical cancers)	This indicator looks at how long patients wait for cancer surgery, measuring the time between the initial consultation with the surgeon and the date the surgery was done, reporting both the median (the time by which 50% of patients underwent surgery) and the 90th percentile (the time by which 90% of patients underwent surgery).
End-of-life	26.	Death in an acute-care bed (lung, colorectal, breast or gynecological cancers)	This indicator measures the percentage of patients with cancer who died in an acute-care bed in hospital.
End-of-life	27.	Emergency department visit in the last two weeks of life (lung, colorectal, breast or gynecological cancers)	This indicator measures the proportion of patients who died of cancer who had at least one emergency department visit in the last 2 weeks of life.
End-of-life	28.	Chemotherapy in the last two weeks of life (lung, colorectal, breast or gynecological cancers)	This indicator measures the percentage of cancer patients who received chemotherapy in the two weeks before they died
End-of-life	29.	Home care visits in the last 6 months of life (lung, colorectal, breast or gynecological cancers)	This indicator measures the percentage of cancer patients who died who received one of more home care visits in the last 6 months of life.
End-of-life	30.	Physician house calls in the last two weeks of life (lung, colorectal, breast or gynecological cancers)	This indicator measures the percentage of patients who had one or more physician house calls in the last two weeks of their lives.

Source: *Krzyzanowska (2011), table 2*

NQF (2009)

National Quality Forum NQF: Specifications of the National Voluntary Consensus Standards for Quality of Cancer Care

Category	Symptom Management and End-of-Life Care	Details
End-of-life	Family Evaluation of Hospice Care	Survey of family members of all patients enrolled in a hospice program, who died following care.
End-of-life	Comfortable dying	Patients whose pain was brought under control within 48 hours of admission to hospice.
End-of-life	Chemotherapy in the last 14 days of life	
End-of-life	More than one emergency room visit in the last 30 days of life	
End-of-life	More than one hospitalization in the last 30 days of life	
End-of-life	Intensive care unit admission in the last 30 days of life	
End-of-life	Dying in an acute care setting	
End-of-life	Not admitted to hospice	
End-of-life	Admitted to hospice for less than three days	

Source: *National Quality Forum (2009), appendix A*

Indikatoren AHRQ (2011), AHRQ (2009)

Agency for Health Research and Quality: Quality measures for effectiveness of care: colorectal, breast, cervical and other cancer: all process indicators pertinent to screening.

Source: AHRQ (2011), appendix „Measure Specification“, only online: www.AHRQ.gov/qual/qrdr10/measurespec/cancer.htm

Indikatoren Lorenz (2006)

Agency for Healthcare Research and Quality AHQR Review: Measure Sets for Symptoms and End-of-Life Care

Lorenz (2006) – RAND Health QA Tools

Research and Development Corp. RAND

Category		Indicator
Supportive Cancer Care: Pain	Pain assessment	Regular assessment of pain
Supportive Cancer Care: Pain	Pain treatment	Responsive pain treatment
Supportive Cancer Care: Dyspnea	Dyspnea treatment	Treatment of dyspnea caused by hypoxia

Source: *Lorenz (2006): appendix F1, F2*

Lorenz (2006) – ACOVE

Assessing the Care Of Vulnerable Elders ACOVE

Category		Indicator
Supportive cancer care Pain	Pain assessment	Routine pain assessment in expected dying
Supportive cancer care Dyspnea	Dyspnea treatment	Effective dyspnea treatment in expected dying
Supportive cancer care Dyspnea	Dyspnea treatment	Regular treatment and follow-up of dyspnea in expected dying
Supportive cancer care Depression	Depression assessment	Regular spiritual assessment in expected dying
Supportive cancer care Depression	Depression treatment	Regular assessment or treatment of depression in newly diagnosed cancer
Supportive cancer care Depression	Depression treatment	Routine assessment or treatment of depression in symptomatic patients
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular identification of a surrogate in the outpatient setting
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular identification of a surrogate among hospital admissions with impaired cognition
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular assessment of preferences among inpatients with dementia
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular assessment of preferences in an ICU
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular patient participation in decisions to limit treatment
Supportive cancer care Advanced Care Planning	ACP Application	Documentation of care preferences across venues
Supportive cancer care Advanced Care Planning	ACP Application	Documentation of specific life sustaining preferences
Supportive cancer care Advanced Care Planning	ACP Follow-up	Consistency of preferences with use of ventilatory support
Supportive cancer care: Advanced Care Planning	ACP Follow-up	Care consistency with documented care preferences

Source: *Lorenz (2006): appendix F1, F2, F3, F4*

Lorenz (2006) – Dana-Farber Cancer Institute

Category		Indicator
Supportive cancer care Advanced Care Planning	ACP Follow-up	Late life rate of emergency care: Emergency room visit in the last month of life.

Source: *Lorenz (2006): appendix F4*

Lorenz (2006) – CCNS

Cancer Care Nova Scotia CCNS

Category		Indicator
Supportive cancer care Pain	Pain treatment	Effective treatment for painful bony metastasis

Source: *Lorenz (2006), appendix F1*

Lorenz (2006) – Cancer Care Ontario

Cancer Care Ontario

Category		Indicator
Supportive cancer care Advanced Care Planning	ACP Follow-up	Late life rate of emergency care: Emergency room visit in the last month of life.
Supportive cancer care Advanced Care Planning	ACP Follow-up	Chemotherapy in the last 14 days of life.
Supportive cancer care Advanced Care Planning	ACP Follow-up	Admission to hospice.
Supportive cancer care Advanced Care Planning	ACP Follow-up	Site of death.

Source: *Lorenz (2006), appendix F4*

Lorenz (2006) – Georgia Cancer Coalition

Georgia Cancer Coalition GCC

Category		Indicator
Supportive cancer care Pain	Pain assessment	Routine assessment of pain.

Source: *Lorenz (2006): appendix F1*

Lorenz (2006) – VHA

VHA Inc., Irving, Texas

Category		Indicator
Supportive cancer care Pain	Pain assessment	Regular ICU pain assessment
Supportive cancer care Pain	Pain follow-up	Effective treatment of pain in the ICU
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular identification of a surrogate in the ICU.
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular assessment of advance directives for ICU patients
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular assessment of specific resuscitation preferences in the ICU
Supportive cancer care Advanced Care Planning	ACP Assessment	Regular clinician-patient-family communication in the ICU

Source: *Lorenz (2006): appendix F1, F4*

Lorenz (2006) – UHC

University Health Consortium UHC

Category		Indicator
Supportive cancer care Pain	Pain assessment	Routine inpatient pain assessment
Supportive cancer care Pain	Pain assessment	Routine inpatient pain assessment with a numeric scale
Supportive cancer care Pain	Pain treatment	Regular prophylaxis of opiate-induced constipation
Supportive cancer care Pain	Pain follow-up	Timely treatment of inpatient pain
Supportive care Dyspnea	Dyspnea assessment	Regular dyspnea assessment
Supportive care Dyspnea	Dyspnea follow-up	Timely treatment of inpatient dyspnea
Supportive care Depression	Depression assess-ment	Regular assessment for psychosocial well-being
Supportive care Advance Care Plan-ning	ACP assessment	Regular family meetings among hospital-ized patients
Supportive care Advance Care Plan-ning	ACP assessment	Timely and effective discharge planning

Source: *Lorenz (2006): appendix F1, F2, F3, F4*

Lorenz (2006) – NHPCO

National Hospice and Palliative Care Organisation NHPCO

Category		Indicator
Supportive cancer care Pain	Pain follow-up	Timely treatment of pain in hospice
Supportive care Advance Care Plan-ning	ACP assessment	Regular assessment of preferences in hospice
Supportive care Advance Care Plan-ning	ACP follow-up	Safe dying in hospice (survey of care-givers after death)

Source: *Lorenz (2006): appendix F1, F4*

Patwardhan (2007)

Agency for Healthcare Research and Quality AHRQ Review: Selected quality measures for the diagnosis and treatment of colorectal cancer: All indicators specific for colorectal cancer.

Source: *Patwardhan (2007), table 3*

Moher (2004)

Agency for Healthcare Research and Quality AHRQ Review: Listing of Quality Indicators Used to Measure Adherence to Standards of Breast Cancer Care: All indicators breast cancer specific.

Source: *Moher (2004), appendix G*

Malin (2006)

Malin (2006) – Breast Cancer

Results of the National Initiative for Cancer Care Quality: breast cancer care measures with less than 85% adherence by metropolitan statistical area: All indicators breast cancer specific.

Source: *http://jco.ascopubs.org/content/24/4/626/T9.expansion.html - table 5*

Malin (2006) – Colorectal cancer

Results of the National Initiative for Cancer Care Quality: colorectal cancer care measures with less than 85% adherence by metropolitan statistical area: All indicators specific for colorectal cancer.

Source: *http://jco.ascopubs.org/content/24/4/626/T10.expansion.html - table 6*

ASCO – NCCN (2007)

American Society of Clinical Oncology ASCO and National Comprehensive Cancer Care Network NCCN, Indicators for Breast, Colon, Colorectal and Rectal Cancer: All indicators non generic.

Source: *breast and colon – table 1, colorectum – table 2, rectum – table 3: www.asco.org/ASCO/Downloads/Cancer%20Policy%20and%20Clinical%20Affairs/NCCN/ASCO%20NCCN%20Quality%20Measures%20table%20web%20posting%20with%20CoC%200507.pdf*

ASCO/ QOPI (2011)

American Society of Clinical Oncology ASCO– Quality Oncology Practice Initiative QOPI: Summary of Measures

Category	Core
Generic Process	1. Pathology report confirming malignancy*
Generic Process	2. Staging documented within one month of first office visit*
Generic Process	3. Pain assessed by second office visit
Generic Process	4. Pain intensity quantified by second office visit
Generic Process	5. Plan of care for moderate/severe pain documented
Generic Process	7. Effectiveness of narcotic assessed on visit following prescription
Generic Process	8. Constipation assessed at time of narcotic prescription or following visit
Generic Process	9. Documented plan for chemotherapy, including doses, route, and time intervals*
Generic Process	10. Chemotherapy intent (curative vs. palliative) documented*
Generic Process	11. Chemotherapy intent discussion with patient documented
Generic Process	12. Number of chemotherapy cycles documented
Generic Process	14. Signed patient consent for chemotherapy
Generic Process	15. Patient consent documented in practitioner note
Generic Process	17. Chemotherapy treatment summary completed within 3 months of chemotherapy end
Generic Process	18. Chemotherapy treatment summary provided to patient within 3 months of chemotherapy end
Generic Process	19. Chemotherapy treatment summary provided or communicated to practitioner(s) within 3 months of chemotherapy end
Generic Process	24. Patient emotional well-being assessed by the second office visit*
Generic Process	25. Action taken to address problems with emotional well-being by the second office visit
Domain Specific Modules	
Symptom/Toxicity Management – Chemotherapy-Related	
Generic Process	26. Serotonin antagonist prescribed with moderate/high emetic risk chemotherapy
Generic Process	27. Corticosteroids and serotonin antagonist prescribed with moderate/high emetic risk chemotherapy*
Generic Process	28. Aprepitant prescribed with high emetic risk chemotherapy
Generic Process	30. Baseline iron stores documented within 90 days prior to administration of ESAs
Generic Process	31. Hemoglobin < 10g/dL documented within 2 weeks prior to administration of ESAs
Generic Process	33. Infertility risks discussed prior to chemotherapy with patients of reproductive age*
Generic Process	34. Fertility preservation options discussed or referral to specialist
Care at End-of-Life	
End-of-life	35. Pain assessed on either of the last two visits before death
End-of-life	36. Pain intensity quantified on either of the last two visits before death
End-of-life	37. Plan of care for moderate/severe pain documented on either of the last two visits before death
End-of-life	39. Dyspnea assessed on either of the last two visits before death
End-of-life	40. Dyspnea addressed on either of the last two visits before death
End-of-life	41. Dyspnea addressed appropriately (defect-free measure, 39 and 40)
End-of-life	42. Hospice enrollment and 43. Hospice enrollment or palliative care referral
End-of-life	44. Hospice enrollment within 3 days of death (Lower Score – Better)
End-of-life	45. Hospice enrollment within 7 days of death (Lower Score – Better)
End-of-life	45a. Hospice enrollment and enrolled more than 7 days before death (defect-free measure, 42 and inverse 45)*
End-of-life	46. For patients not referred, hospice or palliative care discussed within the last 2 months of life
End-of-life	48. Chemotherapy administered within the last 2 weeks of life (Lower Score – Better)
**Included in QOPI Certification Program*	

Source: *http://qopi.asco.org/Documents/QOPISpring2011MeasuresSummary_000.pdf*

AMA/ PCPI (2011)

American Medical Association AMA/ Physician Consortium for Performance Improvement PCPI Approved Quality Measures for Cancer Care

Category	Measure Topic	Measure Title
Generic Process	Oncology	• Cancer Stage Documented • Pain Intensity Quantified-Medical Oncology and Radiation Oncology • Pathology Report (QI) • Plan for Chemotherapy Documented • Plan of Care for Pain-Medical Oncology and Radiation Oncology • Treatment Summary Communication – Radiation Oncology • Treatment Summary Documented – Medical Oncology (QI) • Treatment Summary Communicated– Medical Oncology (QI)
End-of-Life	Palliative Care (not cancer specific)	• Advance care planning • Dyspnea screening and management

Source: *http://www.ama-assn.org/apps/listserv/x-check/qmeasure.cgi?submit=PCPI, Aug. 2011*

Greenberg (2005)

Selected indicators for strategy-based, system-level cancer care performance indicators

Category	Strategic goal	Indicator	Definition
Generic Process	Improve measurement, collection, and reporting of cancer system performance	Integrated IT systems	Percentage of hospitals that meet volume cut-off for cancer services that have single view of patient results available in the hospital to appropriate providers that include diagnostic, procedural, systemic, and radiation therapy information.
Generic Process		Cancer data capture	Percentage of hospitals submitting all required data on cancer diagnosis and treatment on time to Cancer Care Ontario Percentage of data by cancer service modality that is submitted to Cancer Care Ontario on time.
Generic Process		Synoptic reporting	Percentage of pathology reports submitted to Cancer Care Ontario that are reported synoptically.
Generic Process		Stage capture rate	Proportion of incident cancer cases in which a cancer stage was identified.
Generic Process	Increase use of evidence and innovation in decision-making	CPOE	Percentage of medical oncologists using Computerized Physician Order Entry systems.
Generic Process		Guideline application	Percentage of Ontario cancer cases treated according to selected Program in Evidence-Based Care (PEBC) guidelines (1–2 example conditions).
Generic Process		Clinical trial Participation	Number of patients recruited to clinical trials for chemotherapy, radiotherapy, and interventions studies by hospital.
Generic Process		Cancer research Funding	Percentage of Integrated Cancer Programs' annual budgets devoted to cancer research funding.
Generic Process		Innovation	Hospitals' self-reported environments for innovation (questionnaire).

Category	Strategic goal	Indicator	Definition
Generic Process	Increase effective use of resources across the system	Radiation therapy (RT) quality assurance	Percentage of RT facilities in compliance with Healing Arts Radiation Protection (HARP) guidelines.
(Generic Process[✣])		Patient satisfaction with coordination of care	Oncology patient satisfaction survey results related to coordination of care.
Generic Process	Improve access to cancer services and reduce waiting times	Appropriate utilization: systemic therapy	Percentage of incident cancer patients receiving systemic therapy post-operatively.
Generic Process		Appropriate utilization: RT	Percentage of cancer cases receiving RT within 1 year of diagnosis.
Waiting Times		Waiting times: surgery	Median, 90th percentile surgical waiting times (date of preoperative consultation to date of surgery) among patients undergoing breast, colorectal, lung, and prostate cancer surgery in Ontario.
Waiting Times		Waiting times: systemic therapy	Median, 90th percentile number of weeks from referral to start of systemic therapy for new patients.
Waiting Times		Waiting times: RT	Median, 90th percentile number of weeks from referral to start of RT for new patients.
(Generic Process[✣])		Patient satisfaction with access to care	Oncology patient satisfaction survey results related to waiting times and access to care.
End-of-Life		Palliative care utilization	Rates of palliative care utilization among cancer patients.
Generic Process		Pain management	Patients' self-reported pain.
(Generic Process[✣])		Pain management	Patients' perception of pain management by providers.
(Generic Process[✣])		Patient satisfaction overall	Oncology patient satisfaction survey results related to patient journey overall.

[✣] Indicators referring to patient satisfaction are in the domain of outcome quality and therefore not included here. In terms of process quality it is necessary to incorporate patient satisfaction surveys related to various aspects of care into the care process in order to then be able to answer questions about patient satisfaction.

Source: *Greenberg (2005), table 3*

CSQI (2011)

Cancer System Quality Index Indicators CSQI, Ontario, Canada

Category	Indicator	Quality Dimension
Generic Process	• Reporting of Cancer Stage at Diagnosis	Effective, Accessible
Generic Process	• Multidisciplinary Cancer Conferences (MCC)	Effective, Accessible
Generic Process	• Radiation Treatment Utilization	Effective, Accessible
Generic Process	• Synoptic Pathology Reporting	Effective, Accessible
(Generic Process[✣])	• Patient Experience with Outpatient Cancer Care	Responsive
Generic Process	• Symptom Assessment	Responsive
Waiting Times	• Wait Times from Surgery to Adjuvant Chemotherapy	Integrated
End-of-Life	• End-of-Life Care o Percentage of cancer patients who were admitted to the ICU in the last two weeks of life o Percentage of cancer patients who visited the emergency department up to two weeks before death o Percentage of cancer patients who died in acute care hospital o Median number of days in acute care for last 6 months of life for patients who died of cancer in Ontario	Responsive
End-of-Life	• Chemotherapy in the Last Two Weeks of Life	Efficient
✣ Indicators referring to patient satisfaction are in the domain of outcome quality and therefore not included here. In terms of process quality it is necessary to incorporate patient satisfaction surveys related to various aspects of care into the care process in order to then be able to answer questions about patient satisfaction.		

Source: *www.cqco.ca/cms/One.aspx?portalId=89621&pageId=89823*

NCASP (2011)

National Clinical Audit Support Programme NCASP – Example Bowel Cancer Audit

Category	Indicator	Reference
Generic Process	Discussed at MDT meeting	NICE guidance and Peer Review recommendations are that 95 per cent to 100 per cent of patients should be discussed at an MDT meeting
Generic Process	Seen by clinical nurse specialist	NICE guidance is that 100 per cent of patients should be seen by a specialist nurse.

Source: *NHS Information Centre (2011)*

AQUA (2011)

Institute for Applied Quality Improvement and Research in Health Care AQUA: quality indicators breast cancer surgery

Category	QI	Description
Generic Process	**QI 9**	Reporting to cancer registry
Waiting Times	**QI 10**	Time from diagnosis to surgery

Source: *AQUA (2011), page 6*

NPK Monitor (2009)

Netherlands National Cancer Control Programme NPK: quality indicators NPK Monitor

Category	Domain	Quality measure
Cancer Care		
Generic Process[*]		Stage at diagnosis
Generic Process		Compliance to guidelines
Waiting Time		Time from diagnosis to treatment
[*]Documentation is aspect of process quality.		

***Source**: NPK Monitor: www.npknet.nl/share/files/205_107897/NPK%20monitorkaartje%20ENG%202009.pdf*

Vlayen (2011)

Belgian Health Care Knowledge Center KCE Projects: Indicators relevant as generic if used in more than one type of cancer.

Vlayen (2011) – Rectal cancer

Category	Domain	Quality measure
Generic process	General Quality indicators: process	Proportion of patients discussed at a MDT meeting

***Source**: Vlayen (2011), appendix 3, table 16*

Vlayen (2011) – Breast cancer

Category	Domain	Quality measure
Generic Process	General Quality indicators: processes	Proportion of breast cancer women discussed at the MDT meeting
Generic Process		Proportion of women with breast cancer who participate in clinical trials
Generic Process	(Adjuvant) treatment	Proportion of women with a breast cancer who are receiving intravenous chemotherapy for whom the planned chemotherapy regimen (which includes, at a minimum: drug[s] prescribed, dose, and duration) is documented prior to the initiation, and at each administration of the treatment regimen

***Source**: Vlayen (2011), appendix 3, table 16*

Vlayen (2011) – Testis cancer

Category	Domain	Quality measure
Generic Process	General quality indicators: processes	Proportion of patients with testicular cancer discussed at the MDT meeting
Generic Process		Proportion of patients with relapsing testicular cancer after curative treatment that are included in a clinical trial

***Source**: Vlayen (2011), appendix 3, tabelle 16*

NIP (2011)

Danish National Indicator Program NIP – Lung Cancer – Indicators and Standards: Waiting times are lung cancer specific here but could be adapted to other cancers.

Category	Type	Indicator Domain	Indicator
Waiting Time	Process	Diagnosing and treatment time	Proportion of patients, for whom the diagnostic package is completed within 28 days of referral
Waiting Time			Proportion of patients having surgery within 14 days after acceptance of the further treatment course (i.e. referral to surgery)
Waiting Time			Proportion of patients having surgery within 42 days of referral to the diagnostic package
Waiting Time			Proportion of patients who initiate chemotherapy within 14 days of acceptance of the further treatment course (i.e. referral to chemotherapy)
Waiting Time			Proportion of patients who initiate chemotherapy within 42 days after referral to the diagnostic package
Waiting Time			Proportion of patients who initiate radiation therapy within 14 days after acceptance of the further treatment course (i.e. referral to radiation therapy)
Waiting Time			Proportion of patients who initiate radiation therapy within 42 days of referral to the diagnostic package

***Source**: Danish National Indicator Program:*
www.nip.dk/files/Subsites/NIP/Om%20NIP/About%20NIP/Lung%20Cancer.pdf

3 Results of indicator selection

The generic process indicators found above in the pool of 17 indicator sets are presented grouped in the following domains defined by the authors:

1. Patient communication
2. Waiting time
3. Documentation
4. Reporting
5. Guideline adherence
6. Clinical trial participation
7. Multidisciplinarity
8. Pain management
9. Dyspnea management
10. Depression/ Emotional well-being
11. General processes
12. Information technology (IT)
13. Cancer research funding
14. Innovation
15. Radiation therapy quality assurance
16. Advance care planning (ACP)
17. End-of-life

3.1 Overview of generic indicators

Five of the 17 indicator sets did not contain any generic process indicators. Table 2 below gives an overview of all generic process indicators found in the remaining pool of 12 indicator sets.

Table 2: Overview generic process indicators found in pool of indicator sets

BOLD if found in more than one indicator set

Explanation of information contained in field "Indicator" with an example:

Indicator Documentation: Staging documented

1 within one month of first office visit

3 at diagnosis

This indicator was found in four indicator sets (X X X X),

first indicator set (**X** X X X) additionally specifies "within one month of first office visit",

third indicator set (X X **X** X)additionally specifies "at diagnosis"

Domain	Subgroup	Indicator	1 Krzyzanowska (2011)	2 NQF (2009)	3.1 Lorenz (2006) RAND	3.2 Lorenz (2006) ACOVE	3.3 Lorenz (2006) Dana-Faber	3.4 Lorenz (2006) CCNS	3.5 Lorenz (2006) CCO	3.6 Lorenz (2006) GCC	3.7 Lorenz (2006) VHA	3.8 Lorenz (2006) UHC	3.9 Lorenz (2006) NHPCO	4 ASCO/QOPI (2011)	5 AMA/PCPI (2011)	6 Greenberg (2005)	7 CSQI (2011)	8 NCASP (2011)	9 AQUA (2011)	10 NPK Monitor (2009)	11.1 Vlayen (2011) Rectum	11.2 Vlayen (2011) Breast	11.3 Vlayen (2011) Testis	12 NIP (2011)
Patient communication		**Patient satisfaction surveys related to various aspects of care conducted**														X	X							
Patient communication		Signed patient consent for chemotherapy												X										
Patient communication		Chemotherapy treatment summary provided to patient within 3 months of chemotherapy end												X										
Patient communication		Infertility risks discussed prior to chemotherapy with patients of reproductive age (Symptom/Toxicity Management – Chemotherapy-Related)												X										
Patient communication		Fertility preservation options discussed or referral to specialist (Symptom/Toxicity Management – Chemotherapy-Related)												X										

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
Patient communication		Symptom Assessement Percentage of cancer patients who were screened at least once per month for symptom severity															X							
Waiting Time		From diagnosis to treatment																		X				
Waiting Time		From referral to completion of diagnostic package																						X
Waiting Time		From referral to diagnostic package to surgery																						X
Waiting Time		From diagnosis to surgery																	X					
Waiting Time		From referral to surgery																						X
Waiting Time		**From initial consultation with surgeon to surgery**	X													X								
Waiting Time		From referral to diagnostic package to chemotherapy																						X
Waiting Time		**From referral to chemotherapy**														X								X
Waiting Time		From surgery to adjuvant chemotherapy														X								
Waiting Time		From referral to diagnostic package to radiation therapy																						X
Waiting Time		**From referral to radiation therapy**														X								X
Documentation		**Pathology report** 1 confirming malignancy 2 (QI)												X	X									
Documentation	Staging	**Staging documented** 1 within one month of first office visit 3 at diagnosis												X	X		X			X				
Documentation	Stage capture rate	Proportion of incident cancer cases in which a cancer stage was identified.														X								

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
Documentation	Care Planning	**Plan of care for pain documented** 1 for moderate/severe pain 2 Medical Oncology and Radioation Oncology												X	X									
Documentation	Care Planning	Chemotherapy intent (curative vs. palliative) documented												X										
Documentation	Care Planning	**Documented plan for chemotherapy** 1 including doses, route, and time intervals 3 at a minimum: drug[s] prescribed, dose, and duration) is documented prior to the initiation, and at each administration of the treatment regimen												X	X							X		
Documentation	Patient consent	Chemotherapy intent discussion with patient documented												X										
Documentation	Patient consent	Patient consent documented in practitioner note												X										
Documentation		Number of chemotherapy cycles documented												X										
Documentation		**Chemotherapy treatment summary** 1 completed within 3 months of chemotherapy end 2 Medical Oncology (QI)												X	X									
Documentation	Symptom/Toxicity Management – Chemotherapy-Related	Baseline iron stores documented within 90 days prior to administration of ESAs												X										
Documentation	Symptom/Toxicity Management – Chemotherapy-Related	Hemoglobin < 10g/dL documented within 2 weeks prior to administration of ESAs												X										
Reporting		Percentage of cases reported to cancer registry																	X					
Reporting		Percentage of hospitals submitting all required data on cancer diagnosis and treatment on time/ Percentage of data by cancer service modality that is submitted														X								
Reporting		**Synoptic Pathology Reporting** 1 Percentage of pathology reports submitted that are reported synoptically														X	X							

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
Guideline adherence		**Compliance to guidelines**														X				X				
Clinical trial participation		**Participation in Clinical Trials** 1 Number of patients recruited to clinical trials for chemotherapy, radiotherapy, and interventions studies by hospital.														X						X	X	
Multidisciplinarity		**Patient discussed at multidisciplinary forum** 1 Multidisciplinary Cancer Conferences 2 Multi Disciplinary Team Meeting															X	X			X	X	X	
Multidisciplinarity		Patient seen by clinical nurse specialist																X						
Multidisciplinarity	Communication	**Treatment summary** 1 chemotherapy treatment summary provided or communicated to practitioner(s) within 3 months of chemotherapy end 2 radiation oncology and medical oncology (QI)												X	X									
Pain management	Assessment	**Pain Assessment** 1 regular 2 routine 3 routine inpatient 4 pain assessed by second office visit			X					X		X		X										
Pain management	Assessment	Pain Assessment regular in ICU									X													
Pain management	Assessment	**Pain intensity quantified** 1 routine with a numeric scale 2 by second office visit 3 medical oncology and radiation oncology 4 patients' self-reported pain										X		X	X	X								
Pain management	Assessment	Effectiveness of narcotic assessed on visit following prescription												X										

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
Pain management	Constipation	Constipation assessed at time of narcotic prescription or following visit												X										
Pain management	Constipation	Regular prophylaxis of opiate-induced constipation										X												
Pain management	Treatment	**Pain Treatment** 1 responsive 2 effective for painful bony metastasis 3 timely of inpatient pain 4 patients' perception of pain management by providers			X			X				X				X								
Pain management	Treatment	Effective pain treatment in ICU									X													
Dyspnea management	Assessment	Regular dyspnea assessment										X												
Dyspnea management	Treatment	**Dyspnea treatment** 1 dyspnea caused by hypoxia 2 timely of inpatient			X							X												
Depression/ Emotional well-being	Assessment	**Assessment emotional well-being** 1 Regular assessment for psychological well-being 2 Patient emotional well-being assessed by the second office visit										X		X										
Depression/ Emotional well-being	Treatment	Action taken to address problems with emotional well-being by the second office visit												X										
Depression	Assessment/ Treatment	Regular assessment or treatment of depression in newly diagnosed cancer				X																		
Depression	Assessment/ Treatment	Routine assessment or treatment of depression in symptomatic patients				X																		
General processes	Appropriate utilization: systemic therapy	Percentage of incident cancer patients receiving systemic therapy post-operatively.														X								

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
General processes	Appropriate utilization radioation treatment	**Radiation Treatment Utilization** 1 percentage of cancer cases receiving radiation therapy within one year of diagnosis														X	X							
General processes	Symptom/Toxicity Management – Chemotherapy-Related	Serotonin antagonist prescribed with moderate/high emetic risk chemotherapy												X										
General processes	Symptom/Toxicity Management – Chemotherapy-Related	Corticosteroids and serotonin antagonist prescribed with moderate/high emetic risk chemotherapy												X										
General processes	Symptom/Toxicity Management – Chemotherapy-Related	Aprepitant prescribed with high emetic risk chemotherapy												X										
Information Technology	Integrated IT systems	Percentage of hospitals that meet volume cut-off for cancer services that have single view of patient results available in the hospital to appropriate providers that include diagnostic, procedural, systemic, and radiation therapy information														X								
Information Technology	Automatization	Percentage of medical oncologists using "Computerized Physician Order Entry" systems.														X								
Cancer Research Funding		Percentage of Integrated Cancer Programs' annual budgets devoted to cancer research funding														X								
Innovation		Hospitals' self-reported environments for innovation (questionnaire)														X								
Radiation therapy quality assurance		Percentage of RT facilities in compliance with "Healing Arts Radiation Protection" guidelines														X								
Advance Care Planning ACP		Advance care planning													X									
ACP		Timely and effective discharge planning										X												
ACP	Surrogate	Regular identification of a surrogate in the outpatient setting				X																		

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
ACP	Surrogate	Regular identification of a surrogate among hospital admissions with impaired cognition				X																		
ACP	Surrogate	Regular identification of a surrogate in the ICU									X													
ACP	Preferences Assessment	Regular assessment of preferences among inpatients with dementia				X																		
ACP	Preferences Assessment	Regular assessment of preferences in hospice											X											
ACP	Preferences Assessment	**Regular assessment of preferences in an ICU** 2 specific resuscitation preferences				X					X													
ACP	Preferences Assessment	Regular assessment of advance directives for ICU patients									X													
ACP	Preferences Documentation	Documentation of care preferences across venues				X																		
ACP	Preferences Documentation	Documentation specific life sustaining preferences				X																		
ACP	Preferences Follow-up	Consistency of preferences with use of ventilator support				X																		
ACP	Preferences Follow-up	**Care consistency with documented care preferences**				X									X									
ACP	Communications	Regular clinician-patient-family communication in the ICU									X													
ACP	Communications	Regular family meetings among hospitalized patients										X												
ACP		Regular patient participation in decisions to limit treatment				X																		
End-of-life		**Death in acute-care bed** 3 site of death	X	X					X								X							
End-of-life		More than one hospitalization in the last 30 days of life		X																				
End-of-life		Median number of days in acute care for last 6 months of life for patients who died of cancer															X							

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
End-of-life		**Emergency department visit** 1 in the last two weeks of life 2 more than one ER visit in the last 30 days of life 3 ER visit in the last month of life 4 ER visit in the last month of life 5 in the last two weeks of life	X	X			X		X								X							
End-of-life		**Intensive care unit admission** 1 in the last 30 days of life 2 in the last 14 days of life		X													X							
End-of-life		**Chemotherapy in the last two weeks of life**	X	X					X					X			X							
End-of-life		Home care visit in the last 6 months of life	X																					
End-of-life		Physician house calls in the last two weeks of life	X																					
End-of-life	Hospice/ Palliative care	**Hospice enrolment** 1 not admitted to hospice (inverse) 2 admission to hospice (equivalent to: Death in acute-care bed) 3 hospice or palliative care referral 4 rates of palliative care utilization		X					X					X		X								
End-of-life	Hospice	**Admitted to hospice for less than** 1 three days 2 seven days		X										X										
End-of-life	Hospice	For patients not referred, hospice or palliative care discussed within the last 2 months of life												X										
End-of-life	Hospice	**Family evaluation of hospice care** 2 Survey of caregivers after death		X									X											

Domain	Subgroup	Indicator	1	2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4	5	6	7	8	9	10	11.1	11.2	11.3	12
End-of-life	Pain Assessment	Routine pain assessment in expected dying				X																		
End-of-life	Pain Assessment	Pain assessed on either of the last two visits before death												X										
End-of-life	Pain Assessment	Pain intensity quantified on either of the last two visits before death												X										
End-of-life	Pain Documentation	lan of care for moderate/severe pain documented on either of the last two visits before death												X										
End-of-life	Pain Treatment	Comfortable dying: pain		X																				
End-of-life	Pain Treatment	Timely treatment of pain in hospice											X											
End-of-life	Dyspnea Assessment	**Dyspnea assessed on either of the last two visits before death** 2 Dyspnea screening												X	X									
End-of-life	Dyspnea Treatment	Effective treatment in expected dying				X																		
End-of-life	Dyspnea Treatment	Regular treatment and follow-up in expected dying				X																		
End-of-life	Dyspnea Treatment	**Dyspnea addressed on either of the last two visits before death** 2 Dyspnea management												X	X									
End-of-life	Depression/ Spiritual well-being	Assessment Regular spiritual assessment in expected dying				X																		

31 generic process indicators were found in more than one indicator set.

- Waiting time (4)
- Documentation (5)
- Reporting (1)
- Guideline adherence (1)
- Clinical trial participation (1)
- Multidisciplinarity (2)
- Pain management (3)
- Dyspnea management (1)
- Depression/ Emotional well-being (1)
- General processes (1)
- Advance care planning (2)
- End-of-life (9)

These are presented in table 3 below.

Table 3: Generic process indicators found at least twice in pool of indicator sets

No.	Domain	Subgroup	Indicator	Details/ Source
1	Patient communication		Patient satisfaction surveys related to various aspects of care conducted	In order to answer questions about patient satisfaction with various aspects of care (Greenberg 2005: coordination of care, access to care, pain management, overall, CSQI 2011: experience with outpatient cancer care) the respective surveys need to be incorporated in the care process.
2	Waiting Time		From initial consultation with surgeon to surgery	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92546
3	Waiting Time		From referral to chemotherapy	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92651
4	Waiting Time		From referral to radiation therapy	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92598
5	Documentation		Pathology report	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #10
6	Documentation	Staging	Staging documented	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92520
7	Documentation	Care Planning	Plan of care for pain documented	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #9
8	Documentation	Care Planning	Documented plan for chemotherapy	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #6
9	Documentation		Chemotherapy treatment summary	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #5
10	Reporting		Synoptic Pathology Reporting	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92533
11	Guideline adherence		Compliance to guidelines	NPK Monitor 2009 http://www.npknet.nl/2210-p-1908
12	Clinical trial participation		Participation in Clinical Trials	Greenberg (2005), table 3
13	Multidisciplinarity		Patient discussed at multidisciplinary forum	Most far reaching concept: Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92559
14	Multidisciplinarity	Communication	Treatment summary	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #5 and # 6
15	Pain management	Assessment	Pain Assessment	Georgia Cancer Coalition Lorenz (2006): appendix F1

No.	Domain	Subgroup	Indicator	Details/ Source
16	Pain management	Assessment	Pain intensity quantified	University Health Consortium Lorenz (2006): appendix F1
17	Pain management	Treatment	Pain Treatment	RAND Lorenz (2006): appendix F1
18	Dyspnea management	Treatment	Dyspnea treatment	University Health Consortium Lorenz (2006): appendix F2
19	Depression/ Emotional well-being	Assessment	Assessment emotional well-being	University Health Consortium Lorenz (2006): appendix F3
20	General Processes	Appropriate utilization radioation treatment	Radiation Treatment Utilization	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92612
21	Advanced Care Planning ACP	Preferences Assessment	Regular assessment of preferences in an ICU	Assessing the Care Of Vulnerable Elders ACOVE Lorenz (2006): appendix F4
22	ACP	Preferences Follow-up	Care consistency with documented care preferences	Assessing the Care Of Vulnerable Elders ACOVE Lorenz (2006): appendix F4
23	End-of-life		Death in acute-care bed	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397
24	End-of-life		Emergency department visit	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397
25	End-of-life		Intensive care unit admission	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397
26	End-of-life		Chemotherapy in the last two weeks of life	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397
27	End-of-life	Hospice/ Palliative care	Hospice enrolment	National Quality Forum NQF (2009a), A-14
28	End-of-life	Hospice	Admitted to hospice for less than	National Quality Forum NQF (2009a), A-14
29	End-of-life	Hospice	Family evaluation of hospice care	National Quality Forum NQF (2009a), A-9 Details on family evaluation survey: NQF (2009a), figure A-1, table A-1
30	End-of-life	Dyspnea Assessment	Dyspnea assessed on either of the last two visits before death	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/palliative-care.pdf Measure #2
31	End-of-life	Dyspnea Treatment	Dyspnea addressed on either of the last two visits before death	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/palliative-care.pdf Measure #2

3.2 Detailed description of generic process indicators

Detailed information about the 31 generic process indicators found in more than one of the pool indicator sets is presented below:

No.	Domain	Subgroup	Indicator	Details/ Source
1	Patient communication		Patient satisfaction surveys related to various aspects of care conducted	In order to answer questions about patient satisfaction with various aspects of care (Greenberg 2005: coordination of care, access to care, pain management, overall, CSQI 2011: experience with outpatient cancer care) the respective surveys need to be incorporated in the care process.

No.	Domain	Subgroup	Indicator	Details/ Source
2	Waiting Time		From initial consultation with surgeon to surgery	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92546

Wait time for cancer surgery

Definition	Percent of cancer surgery patients treated within 14, 28 and 84 days access target for priority 2,3 and 4 cases, respectively
Calculation	$\frac{\text{Total \# of patients treated within their respective priority targets}}{\text{Total \# of cancer surgery patients}} \times 100 =$ Percentage of treatment within target
Analysis	• Provincial trend from January 2009 to December 2010, by Priority Access Target Disease Site and LHIN
Considerations	• The percent of cancer surgery patients treated within 14, 28 and 84 days is weighted based on volume by priority.
Technical Specifications	• Wait time (in days) for cancer surgery is calculated as: • Surgery Operation Date – Decision to Treat Date – Patient Unavailable Days • Based on closed cases, with operation dates within date range, submitted by hospitals through the Wait Time Information System (WTIS). • Procedures classified as "NA" are currently included. • If unavailable days fall outside the decision to treat date up to procedure date, unavailable days are not deducted from patients' wait days. These are considered data entry errors. Exclusions: • Individuals <18 years old • Procedures that are no longer required for submission

	• Skin – carcinoma, skin – melanoma, and lymphomas • Priority 1 procedures • Diagnostic, palliative, and reconstructive cancer procedures • Non cancer diagnosis • Wait list entries identified by hospitals as data entry errors
Numerator	• Total # of cancer surgery patients treated within their respective priority access targets; 14, 28 and 84 days for priority 2,3 and 4 cases, respectively
Denominator	• Total # of cancer surgery patients after exclusion
Data Sources	• Wait Time Information System, Cancer Care Ontario
Data Availability & Limitations	• Calculated for the period between January 2009 and December 2010 • Guidelines are implemented to ensure the facilities submit their data through WTIS in close to real time at source. A 2-business-day rule has been put in place for opening a wait list entry in the system when the decision for treatment is made, and closing the entry after the procedure is performed. This rule is established to ensure compliance with timely data submissions. • It is possible to allow for an audit trail back to the original source of data in the physician's office or the hospital scheduling system

No.	Domain	Subgroup	Indicator	Details/ Source
3	Waiting Time		From referral to chemotherapy	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92651

Wait time systemic therapy "consult to treatment"

Definition	Percentage of patients that are seen within the consult to treatment wait time target for systemic therapy
Calculation	$\frac{\text{Total Number of Patients within Ready to treat to treat wait time target}}{\text{Total Number of Valid Cases}} \times 100 = \text{Percent of patients seen within target}$
Analysis	• January to December 2009, 2010, by Regional Cancer Centre and Disease Site
Considerations	• The consult to treatment activity presented in this report is limited to treatment activity provided within the Regional Cancer Centres which covers about 65% of the provincial activity.
Technical Specifications	• Systemic Consult to Treatment patients are those patients with both a valid Consult and Treatment Date receiving treatment at the Regional Cancer Centre. • Only new treatments for a particular disease site are included Exclusions: • Diagnosis site not between 'C00' and 'D49'

Definition	Percentage of patients that are seen within the consult to treatment wait time target for systemic therapy
	• Consult date is null • Consult date is greater than Treatment date • Program Code is Radiation and Treatment is non-IV chemotherapy
Numerator	• Total number of patients within ready to treat to treatment wait time of 1, 7 and 14 days
Denominator	• Total number of cases with a valid Treatment Date during the reporting time period
Data Sources	• Activity Level Reporting, Cancer Care Ontario
Data Availability & Limitations	• Data for the 2 intervals referral to consult and ready to treat to treatment are available only from April 2007 onwards. Only new systemic patients are included (excludes re-treats)

No.	Domain	Subgroup	Indicator	Details/ Source
4	Waiting Time		From referral to radiation therapy	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92598

Wait Times for Radiation Treatment "Ready to Treat to Treatment"

Definition	Percentage of patients that are seen within the ready to treat to treatment wait time target
Calculation	$\frac{\text{Total Number of Patients within Ready to treat to treat wait time target}}{\text{Total Number of Valid Cases}} \times 100 =$ Percent of patients seen within target
Analysis	• January to December 2009, 2010, by Regional Cancer Centre and Disease Site
Considerations	• The ready to treat to treatment activity presented in this report is limited to treatment activity provided within the Regional Cancer Centres.
Technical Specifications	• Radiation Ready to Treat to Treatment patients are those patients with both a valid Ready to Treat and Treatment Date receiving treatment at the cancer centre. • Only new treatments for a particular disease site are included Exclusions: • Diagnosis site not between 'C00' and 'D49' • Treatment date is null • Ready to Treat date is null • Ready to Treat date is greater than Treatment date
Numerator	• Total number of patients within ready to treat to treatment wait time of 1, 7 and 14 days

Definition	Percentage of patients that are seen within the ready to treat to treatment wait time target
Denominator	• Total number of cases with a valid Treatment Date during the reporting time period
Data Sources	• Activity Level Reporting, Cancer Care Ontario
Data Availability & Limitations	• Data for the 2 intervals referral to consult and ready to treat to treatment are available only from April 2007 onwards. Only new radiation patients are included (excludes re-treats)

No.	Domain	Subgroup	Indicator	Details/ Source
5	Documenta-tion		Pathology report	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #10

Pathology Report

This measure is appropriate as a Quality Improvement measure only.

Clinical Performance Measure
Numerator: Patients with a pathology report in the medical record that confirms malignancy prior to the initiation of therapy **Denominator:** All patients with a diagnosis of cancer receiving chemotherapy or radiation therapy **Denominator Exceptions:** Documentation of medical reason(s) for not having a pathology report in the medical record that confirms malignancy prior to the initiation of therapy (eg, palliative treatment for metastatic illness) **Measure:** Percentage of patients with a diagnosis of cancer receiving chemotherapy or radiation therapy with a pathology report in the medical record that confirms malignancy prior to the initiation of therapy
The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure: The cognitive process of treatment planning requires the radiation oncologist to have knowledge of the natural history of the tumor to be treated and to determine the tumor site, its extent, and its relationship with adjacent normal tissues. This process is based on consideration of the history, physical examination, endoscopy, diagnostic imaging, findings at surgery, and histology (ACR) A practice must demonstrate that it performs an adequate clinical evaluation by taking a patient history, performing a physical examination, reviewing pertinent diagnostic studies and reports, determining the extent of the tumor for staging purposes, and communicating with the referring physician and certain other physicians involved in the patient's care. (ACRO)
Rationale for the measure: The extent of the tumor must be determined and recorded for staging; this will facilitate treatment decisions, determine prognosis, and allow a comparison of treatment results.
Data capture and calculations: **Calculation for *Performance*** For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator, Denominator, and Denominator Exclusions. **Performance Numerator (A) Includes:** Patients with a pathology report in the medical record that confirms malignancy prior to the initiation of therapy **Performance Denominator (PD) Includes:** All patients with a diagnosis of cancer receiving chemotherapy or radiation therapy

Performance Denominator Exceptions (C) Include:
Documentation of a medical reason(s) for not having a pathology report in the medical record, confirming malignancy prior to the initiation of therapy (eg, palliative treatment for metastatic illness)

Performance Calculation
A (# of patients meeting numerator criteria) **divided by**
PD (# of patients in denominator) – C (# of patients with valid denominator exclusions)

Components for this measure are defined as:
A
# of patients with a pathology report in the medical record that confirms malignancy prior to the initiation of therapy
PD
# of patients with a diagnosis of cancer receiving chemotherapy or radiation therapy
C
# of patients with a documented medical reason(s) for not having a pathology report in the medical record, confirming malignancy prior to the initiation of therapy (eg, palliative treatment for metastatic illness)
Calculation for *Reporting*
For reporting purposes, this measure is calculated by creating a fraction with the following components: Reporting Numerator and Reporting Denominator
Reporting Numerator includes each of the following instances:
A. Patients who have a pathology report in the medical record that confirms malignancy prior to the initiation of therapy
C. Patients with a documented medical reason(s) for not having a pathology report in the medical record, confirming malignancy prior to the initiation of therapy (eg, palliative treatment for metastatic illness)
D. Patients who do not have a pathology report in the medical record that confirms malignancy prior to the initiation of therapy

Reporting Calculation
A (# of patients meeting numerator criteria) + C (# of patients with valid exclusions) + D (# of patients not meeting numerator criteria) **divided by**
RD (# of patients in denominator)

Reporting Denominator (RD) Includes:
All patients with a diagnosis of cancer receiving chemotherapy
A
# of patients with a pathology report in the medical record that confirms malignancy prior to the initiation of therapy
C
# of patients who do not have a pathology report in the medical record that confirms malignancy prior to the initiation of therapy and there is a documented medical reason for not doing so
D
# of patients who do not have a pathology report in the medical record that confirms malignancy prior to the initiation of therapy
RD
# of patients with a diagnosis of cancer receiving chemotherapy or radiation therapy

No.	Domain	Subgroup	Indicator	Details/ Source
6	Documentation	Staging	Staging documented	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92520

Reporting of Cancer Stage at Diagnosis (Population-based stage capture rate)

Definition	The population-based measure reports the percentage of all eligible new cancer cases in Ontario for which a valid stage at diagnosis is derived from information in the Ontario Cancer Registry (OCR) and the CS database.
Calculation	$\frac{\text{Reportable incident cases in Ontario Cancer Registry where a valid stage at diagnosis is available}}{\text{Reportable incident cases in Ontario Cancer Registry which are TNM stageable}} \times 100 = \text{Population Stage Rate}$
Analysis	• For Jan. 2006 – Dec 2009 • % of reportable incident cases in OCR with valid stage by fiscal year, LHIN, by top four disease sites (Breast, Colorectal, Lung, Prostate)
Considerations	• The AJCC Collaborative Staging (CS) coding system is used by CCO CS analysts to collect the base data elements from cancer patient hospital health records (i.e., cancer pathology report, CT/MRI or other radiology reports, operative note, etc) in 85 hospitals across Ontario. CS data collection is semi-automated with electronic data capture from CCO's ePath data holdings and OCRIS. The CS minimum data set can derive AJCC TNM staging values and includes additional prognostic information such as PSA test results for prostate cancer and ER/PR results for breast cancer • This indicator does not assess the accuracy of the staging information. It is a measure of the completeness in reporting • The calculation integrates two sources of stage data: AJCC TNM staging which is reported to CCO by Ontario's 14 Cancer Centres and the Collaborative Staging (CS) data collection system where trained CCO abstractors collect the base data elements from hospital health records (i.e., cancer pathology report, CT/MRI or other radiology reports, operative note, etc) via remote access to charts in 71 other Ontario hospitals. Starting in March 2010, CS data collection was also initiated in RCCs, to obtain staging for the 2007, 2008 and 2009 diagnosis years for cases where TNM stage was not submitted to CCO • In-situ cases are not included • Currently the CS data collection system in Ontario is limited to the top four disease sites; expansion to other sites will begin in 2011/12 • CS is a new data collection system for staging of cancer based on the TNM categories and stage groupings, Summary Stage, and the SEER Extent of Disease coding structure. The development of the Collaborative Staging coding system was sponsored by the American Joint Committee on Cancer (AJCC) in collaboration with the National Cancer Institute Surveillance, Epidemiology and End Results Program (NCI-SEER); Centers for Disease Control and Prevention National Program of Cancer Registries (CDC/NPCR); National Cancer Registrars Association (NCRA); North American Association of Central Cancer Registries (NAACCR); and American College of Surgeons (ACOS) Commission on Cancer (CoC). Collaborative Staging has been endorsed by all Canadian provinces/territories (including Ontario) and US state registries as the pan-American standard for cancer staging data collection.

Technical Specifications	• Eligible cases include all cancers identifiable in OCR except those cancers for which TNM staging is not appropriate • For cases with multiple different valid stage values (due to multiple visits for Cancer Centres or staging using both TNM and CS systems), the resolved best stage is derived based on a specified algorithm • Inclusion of "Unknown" as a valid stage group, according to the AJCC Staging Guidelines. Exclusions: • Pediatric cases (those patients who are <18 years of age) • Non-melanoma skin • CCO Diagnosis grouping with primary unknown
Numerator	• Total number of reportable incident cases in OCR which a valid stage at diagnosis is available
Denominator	• Total number of reportable registered cases in OCR for which TNM staging is applicable and exclusion criteria are applied.
Data Sources	• Ontario Cancer Registry, Cancer Care Ontario • Activity Level Reporting, Cancer Care Ontario • Collaborative Staging Database, Cancer Care Ontario
Data Availability & Limitations	• The availability of population-based stage information relies on the timeliness of CIHI database and Ontario Cancer Registry case resolution process. Usually it takes up to one and half years after diagnosis to ensure all cancer cases for a given year are identified; • Currently TNM stage data from RCC are available from April 2005 forward and CS data for top four disease sites are available from January 2007 forward; • Recent studies conducted to assess the timeliness, validity and reliability of stage data Collaborative Staging Data Quality Report for 2007 and 2008 found that these data are of high quality; • In 2010/11, starting with the 2010 diagnosis year, the CS data collection system will be used exclusively for the four most common cancers, TNM will continue to be collected by RCCs for other sites, until full CS implementation starting with the 2012 diagnosis year.

No.	Domain	Subgroup	Indicator	Details/ Source
7	Documentation	Care Planning	Plan of care for pain documented	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #9

Plan of Care for Pain-Medical Oncology and Radiation Oncology
This measure may be used as an Accountability measure.

Clinical Performance Measure
Numerator: Patient visits that included a documented plan of care* to address pain Numerator Instructions: *A documented plan of care may include: use of opioids, nonopioid analgesics, psychological support, patient and/or family education, referral to a pain clinic, or reassessment of pain at an appropriate time interval. **Denominator:** All visits for patients, regardless of age, with a diagnosis of cancer currently receiving chemotherapy or radiation therapy who report having pain **Denominator Exceptions:** *None* **Measure:** Percentage of visits for patients, regardless of age, with a diagnosis of cancer currently receiving chemotherapy or radiation therapy who report having pain with a documented plan of care to address pain
The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure: All patients with cancer should be screened during the initial evaluation, at regular intervals, and whenever new therapy is initiated. The standard means for determining how much pain a patient is experiencing relies on a patient's self-report. Severity should be quantified using a 0-10 numerical rating scale, a categorical scale, or the pictorial scale (Wong-Baker Faces Pain Rating Scale). Faces can be used with patients who have difficulty with the above scales, eg, children, the elderly, and patients with language or cultural differences or other communication barriers (Category 2A). (NCCN9) Pain intensity must be quantified, as the algorithm bases therapeutic decisions on a numerical value assigned to the severity of pain. Opioid naïve patients experiencing severe or increasing pain should receive rapid escalating doses of short-acting opioids, a bowel regimen, and Nonopioid analgesics as indicated. Psychosocial support is needed to ensure that patients encountering common barriers to appropriate pain control (eg, fear of addiction or side effects, inability to purchase opioids) or needing additional assistance (eg, depression, rapidly declining functional status) receive appropriate aid. Although pain intensity ratings will be obtained frequently to judge opioid dose increases, a formal reassessment is mandated in 24 hours for severe pain (Category 2A). (NCCN9) For patients whose pain is less than 7 at presentation, the pathways are similar. The main differences include the option to perform the formal pain intensity reassessment less frequently (24-48 hours) and to consider beginning with slower titration of short-acting opioids for patients with moderate pain intensity rating 4-6 or with NSAID or acetaminophen if the patient has mild pain intensity rating from 1 to 0 and is opioid and NSAID-naïve (Category 2A). (NCCN9) Regular, ongoing assessment of pain, nonpain symptoms (including but not limited to shortness of breath, nausea, fatigue and weakness, anorexia, insomnia, anxiety, depression, confusion and constipation), treatment side effects and functional capacities are documented. Validated instruments, where available, should be used. (NCP12) All patients should be routinely screened for pain, and when it is present, pain intensity should be recorded in highly visible ways that facilitate regular review by health care providers. A standard for pain assessment and documentation should be established in each setting to ensure that pain is recognized, documented, and treated promptly. (APS13)
Rationale for the measure: Inadequate cancer pain management is widely prevalent, harmful to the patient, and costly. There are no denominator exclusions for this measure.

Data capture and calculations:
Calculation for *Performance*
For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator and Denominator.
Performance Numerator (A) Includes:
Patient visits that included a documented plan of care to address pain

Performance Denominator (PD) Includes:
All visits for patients, regardless of age, with a diagnosis of cancer, currently receiving chemotherapy or radiation therapy AND

A visit where a patient reports having pain

Performance Calculation

A (# of patient visits meeting numerator criteria) **divided by**
PD (# of patient visits in denominator)

Components for this measure are defined as:
A
# of patient visits that included a documented plan of care to address pain
PD
# of visits for patients, regardless of age, with a diagnosis of cancer currently receiving chemotherapy or radiation therapy who report having pain
Calculation for *Reporting*
For reporting purposes, this measure is calculated by creating a fraction with the following components: Reporting Numerator and Reporting Denominator
Reporting Numerator includes each of the following instances:
A. Patient visits where a patient reports having pain that included a documented plan of care to address pain
D. Patient visits where a patient reports having pain that did not include a documented plan of care to address pain
E. Patient visits that report no pain
Reporting Denominator (RD) Includes:
All patient visits for patients, regardless of age, with a diagnosis of cancer currently receiving chemotherapy or radiation therapy

Reporting Calculation

A(# of patient visits meeting additional denominator criteria AND meeting numerator criteria) **+ D**(# of patient visits meeting additional denominator criteria NOT meeting numerator criteria) + **E** (# of patient visits not meeting additional denominator criteria) **divided by**
RD (# of patient visits in denominator)

A
# of patient visits where a patient reports having pain that included a documented plan of care to address pain
D
# of patient visits where a patient reports having pain that did not include a documented plan of care to address pain
E
# of patient visits where a patient reports no pain
RD
# of visits for patients, regardless of age, with a diagnosis of cancer currently receiving chemotherapy or radiation therapy

No.	Domain	Subgroup	Indicator	Details/ Source
8	Documentation	Care Planning	Documented plan for chemotherapy	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #6

Treatment Summary Communication – Radiation Oncology
This measure may be used as an Accountability measure.

Clinical Performance Measure
Numerator: Patients who have a treatment summary* report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment Definition: *Treatment Summary: a report that includes mention of all of the following components: 1) dose delivered; 2) relevant assessment of tolerance to and progress towards the treatment goals; and 3)subsequent care plans Denominator: All patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy Denominator Exceptions: Documentation of a patient reason(s) for not communicating the treatment summary report to the physician(s) providing continuing care (eg, patient requests that report not be sent) and to the patient within one month of completing treatment Documentation of a system reason(s) for not communicating the treatment summary report to the physician(s) providing continuing care (eg, patient does not have any physician responsible for providing continuing care) and to the patient within one month of completing treatment Measure: Percentage of patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure: A summary should be generated that accurately describes the treatment process, the doses delivered to the target/tumor volume and other key organs, relevant assessment of tolerance to and progress towards the treatment goals, and subsequent care plans. The style will reflect the radiation oncologist's individual practice convention and the referral provider's needs. The style, content, and detail of this summary must be tailored to the clinical setting and prevailing practice norms. It should contain elements that accurately and succinctly reflect the program of care administered in a language understandable to the non-radiation oncologist. It is suggested that, the report to the referring physician include a request for periodic updates on the patient's progress. These updates will facilitate continuity of care should the patient require further radiation therapy. (not ranked) (ACR7)
Rationale for the measure: Timely, accurate, and effective communications are critical to quality and value in contemporary medical practices. As both a consultant oncologist and the provider of radiation oncology services, the radiation oncologist has a dual role. Radiation therapy incorporates the science of complex, integrated treatment delivery and the art of individual cancer management. Through written focused reports and direct communications, the contribution of radiation oncologists concerning patient care, responsible utilization, and quality are provided, especially to primary care physicians, other oncologists and specialists, and allied healthcare providers (nurses, tumor registrars, quality assurance personnel, third-party reviewers, etc). (ACR7)
Data capture and calculations: **Calculation for *Performance*** For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator, Denominator, and Denominator Exclusions. **Performance Numerator (A) Includes:** Patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment **Performance Denominator (PD) Includes:** All patients, regardless of age, with a diagnosis of cancer AND Patients who have undergone brachytherapy or external beam radiation therapy **Performance Denominator Exceptions (C) Include:** Documentation of patient reason(s) for not having a treatment summary report in the chart that was

communicated to the physician(s) providing continuing care (eg, patient requests that report not be sent) and to the patient within one month of completing treatment

Documentation of system reason(s) for not having a treatment summary report in the chart that was communicated to the physician(s) providing continuing care (eg, patient does not have any physician responsible for providing continuing care) and to the patient within one month of completing treatment

Performance Calculation

A (# of patients meeting measure criteria) **divided by**
PD (# of patients in denominator) – C (# of patients with valid denominator exclusions)

Components for this measure are defined as:
A
# of patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
PD
# of patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy
C
# of patients with documented patient or system reason(s) for not having a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment

D. Patients who do not have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment and there is no documented reason for not doing so

Reporting Denominator (RD) Includes:
All patients, regardless of age, with a diagnosis of cancer AND

Patients who have undergone brachytherapy or external beam radiation therapy

Reporting Calculation
A(# of patients meeting numerator criteria) **+ C**(# of patients with valid exclusions) **+ D**(# of patients NOT meeting numerator criteria) **divided by**
RD (# of patients in denominator)

Components for this measure are defined as:
A
# of patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
C
# of patients who do not have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment but for whom there is a documented patient or system reason for not doing so
D
# of patients who do not have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment and there is no documented reason for not doing so
RD
# of patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy

No.	Domain	Subgroup	Indicator	Details/ Source
9	Documentation		Chemotherapy treatment summary	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #5

Treatment Summary Documented and Communicated– Medical Oncology
This measure may be used as a Quality Improvement measure only.

Clinical Performance Measure
Numerator: (this numerator has 3 components that must be calculated individually): A. Patients who have a chemotherapy treatment summary* documented in the medical record B. Patients who have documentation that a chemotherapy treatment summary* was communicated to the patient C. Patients who have documentation that a chemotherapy treatment summary* was communicated to the physician(s) providing continuing care Definition: *Treatment Summary: a report that includes mention of all of the following components: 1) chemotherapy treatment delivered (including number of cycles administered, duration, and extent of dose reduction); 2) reason treatment was stopped; 3) major toxicities and/or hospitalizations; 4) treatment response; 5) follow up care and relevant providers. **This measure requires that ALL components listed within the numerator statement be provided in order to meet the measure.** **Denominator**: All patients, regardless of age, with a diagnosis of cancer who have completed adjuvant chemotherapy treatment within the 12 month reporting period **Denominator Exceptions:** Documentation of a patient reason(s) for not having either a chemotherapy treatment summary documented in the medical record **OR** not having documentation that the chemotherapy treatment summary was communicated to the patient **and** physician(s) providing continuing care (eg, patient requests that report not be sent) Documentation of system reason(s) for not having either a chemotherapy treatment summary documented in the medical record **OR** not having documentation that the written chemotherapy treatment summary was provided to the patient andphysician(s) providing continuing care (eg, patient does not have any physician responsible for providing continuing care) **This measure requires that ALL components listed within the numerator statement be provided in order to meet the measure.** **Measure:** Percentage of patients, regardless of age, with a diagnosis of cancer who have completed adjuvant chemotherapy treatment within the 12 month reporting period who: A) have a chemotherapy treatment summary* documented in the medical record; AND B) have documentation that a chemotherapy treatment summary* was communicated to the patient; AND C) have documentation that a chemotherapy treatment summary* was communicated to the physician(s) providing continuing care
The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure: The chemotherapy treatment summary should be prepared at the completion of a course of treatment. The core elements of a chemotherapy treatment summary are: Chemotherapy treatment delivered, including number of cycles administered, duration, and extent of dose reduction Reason treatment was stopped Major toxicities and/or hospitalizations Treatment response Follow up care and relevant providers
This may occur at the end of a course of adjuvant therapy, before a planned surgical resection, or after disease progression. Treatment breaks, holidays, and minor modifications are not envisioned as triggering preparation of such a summary. The treatment plan and summary are not intended to replace detailed chart documentation, including complete patient histories or chemotherapy flow sheets. (ASCO)

Rationale for the measure:

Timely, accurate, and effective communications are critical to quality and value in contemporary medical practices. This measure is broken into 3 distinct components to encourage sharing of communication about the patient's course of treatment with the patient him/herself, the physician proving continuing care for the patient, and documented in the medical record. Since each component of the numerator will be scored separately, physicians will know exactly which aspect of care may need improvement.

Data capture and calculations:

Calculation for Performance

For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator, Denominator, and Denominator Exclusions.

Performance Numerator (A) Includes:

Patients who have a chemotherapy treatment summary documented in the chart AND who have a documentation that the written chemotherapy treatment summary was provided to the patient AND who have documentation that the chemotherapy treatment summary was communicated to the physician(s) providing continuing care

Performance Denominator (PD) Includes:

All patients, regardless of age, with a diagnosis of cancer AND

Patients who have completed adjuvant chemotherapy treatment within the 12 month reporting period

Performance Denominator Exceptions (C) Include:

Documentation of patient reason(s) for not having either a chemotherapy treatment summary documented in the chart OR not having documentation that the chemotherapy treatment summary was communicated to the patient OR not having documentation that the chemotherapy treatment summary was communicated to the physician(s) providing continuing care (eg, patient requests that report not be sent)

Documentation of system reason(s) for not having either a chemotherapy treatment summary documented in the chart OR not having documentation that the written chemotherapy treatment summary was provided to the patient OR not having documentation that the chemotherapy treatment summary was communicated to the physician(s) providing continuing care (eg, patient does not have any physician responsible for providing continuing care)

Performance Calculation

A (# of patients meeting measure criteria) **divided by**

PD (# of patients in denominator) – C (# of patients with valid denominator exclusions)

Components for this measure are defined as:

A

# of patients who have a chemotherapy treatment summary documented in the chart AND who have a documentation that the written chemotherapy treatment summary was provided to the patient AND who have documentation that the chemotherapy treatment summary was communicated to the physician(s) providing continuing care

PD

# of patients with a diagnosis of cancer who have completed adjuvant chemotherapy treatment within the 12 month reporting period

C

# of patients with documented patient or system reason(s) for not having either a chemotherapy treatment summary documented in the chart OR not having documentation that the written chemotherapy treatment summary was provided to the patient OR not having documentation that the chemotherapy treatment summary was communicated to the physician(s) providing continuing care

No.	Domain	Subgroup	Indicator	Details/ Source
10	Reporting		Synoptic Pathology Reporting	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92533

Synoptic Pathology Reporting

Definition	Percent of 5 common cancer pathology reports submitted in discrete synoptic format, as per the College of American Pathologist's (CAP) inclusion criteria 5 common cancers sites are: Invasive Breast, Colorectal, Prostate, Endometrium and Lung
Calculation	Number reports received in discrete synoptic format ——————————————— X 100 = Synoptic Rate (%) Total number of pathology reports received in either discrete synoptic or narrative format
Analysis	• Discrete synoptic reporting rate by pathology submitting facility LHIN (reporting in either discrete synoptic or narrative format in 2010
Considerations	• North East LHIN, for specified timeframe, does not include the Ottawa Hospital. The Ottawa Hospital has since gone live in January 2011
Technical Specifications	• This report utilizes **all pathology resection reports received in discrete synoptic data format** from Ontario hospitals through Cancer Care Ontario's pathology reporting database during the defined reporting period. The source data set **excludes** the following: • All Non cancer cases • ICDO-3 behaviours of 0 (benign), 1 (borderline), 6 (metastatic), and 2 (in situ). • Report with a status of "K" (consult of external hospital) • All report types other than surgical pathology ("P") reports (i.e. biopsies are excluded) • Reports not coded at time of analysis • Reports from private labs (institution codes of 9300 or greater) and pediatric hospitals • Reports in which the "Specimen Type" contains any of the following terms: o For prostate: TURPs, Chips, Transurethral, Prostate TUR, cystoprostatectomies; o For colorectal cancer: polyp, rectal abscess, rectal polyp, polypectomy o For endometrium: uterine curettings • Reports in which the "Specimen Taken" date was before go-live date plus two days **Important Note Regarding the Discrete Synoptic Reporting Indicator:** The Synoptic Pathology Reporting target is set at 90% rather than 100%, which allows a 10% window for those rare cases that do not fit the current CAP checklists and which CCO cannot exclude automatically. Please be aware of this when reviewing/interpreting the results for the synoptic pathology reporting indicator. Examples of the rare instances where the current CAP checklist DDF templates may not or cannot be appropriately utilized by the reporting pathologists include: • Microinvasion breast cancer • Unusual histologies (i.e. sarcomas, phyllodes tumour, carcinosarcoma, neuroendocrine tumours) • Re-excisions • Recurrent tumours

	• Axillary node dissection only • Reports waiting for consultation (if uncertainty of diagnosis of cancer) [1] College of American Pathologists. An overview of the College of American Pathologists cancer checklists, 2009. Available at: http://www.cap.org/apps/docs/snomed/CAP_Cancer_Checlkists_Overview_090115.pdf. Accessed March 13, 2009.
Numerator	• All 5 common cancer resection reports received in discrete synoptic format (level 5 or 6) in 2010
Denominator	• All 5 common cancer resection reports received by CCO in 2010
Data Sources	• Pathology Information Management System, Cancer Care Ontario, as of January 2011
Data Availability & Limitations	• N/A

No.	Domain	Subgroup	Indicator	Details/ Source
11	Guideline adherence		Compliance to guidelines	NPK Monitor 2009 http://www.npknet.nl/2210-p-1908

Compliance to guidelines

Indicators
Compliance with guidelines, specified by tumour type and stage. Several of these guidelines are presented as an indicator in the Monitor 2009. For *breast cancer*: • Performing breast-conserving surgery (lumpectomy) for small breast tumours (T1 N0,1,2 M0) on women from 15 to 75 years old. For *colon cancer*: • The percentage of patients operated on, whereby a minimum of 10 lymph nodes are examined/removed via resection (only for stage I or II tumours). • The percentage of patients operated on who are under 80 years of age with a pathological stage III tumour, and who were administered adjuvant chemotherapy. For *rectal cancer*: • The percentage of patients operated on who are under 80 years of age and have received preoperative radiotherapy. For *bladder cancer:* • The percentage of patients operated on (cystectomy) in whom radical lymph node dissection was performed (a minimum of 10 lymph nodes are removed).

Objective
The NPK stipulates that every patient is entitled to optimal and timely diagnosis, treatment and care in accordance with the most current guidelines. The guideline for small breast tumours favours breast-conserving surgery, which aims to achieve an "excellent" cosmetic result and optimal locoregional tumour control (www.oncoline.nl).
Two guidelines are provided for colon cancer. The first guideline aims at the highest possible percentage of patients operated on with a stage I or II tumour, whereby a minimum of 10 lymph nodes are examined/removed.
The second guideline concerns the administration of adjuvant chemotherapy and aims at the highest possible percentage of patients with a pathological stage III tumour who receive adjuvant chemotherapy.

The guideline for rectal cancer favours preoperative radiotherapy over postoperative radiotherapy and indicate preoperative radiotherapy for all T2-T4 tumours (www.oncoline.nl). The aim is therefore a high percentage of patients operated on who have undergone preoperative radiotherapy (www.oncoline.nl).
The guideline for bladder cancer aims at the highest possible percentage of patients operated on, in whom radical lymph node dissection was performed (i.e. a minimum of 10 lymph nodes are examined).

Technical information Definitions

Compliance with guidelines requires that relevant indicators be specified for each tumour type and stage. One such example is the application of breast-conserving surgery for small (T1) invasive primary breast tumours among women between the ages of 15 and 75.
Two indicators are provided for colon cancer. The first is the percentage of patients with a stage I or II tumour, whereby a minimum of 10 lymph nodes are removed/examined during resection. The second indicator for colon cancer represents the percentage of patients that have had a resection and received adjuvant chemotherapy. Only those patients under the age of 80 and with a stage III tumour are taken into account for this.
For rectal cancer, the indicator is the percentage of patients under the age of 80 who have received preoperative radiotherapy. All stages are taken into account for this. Rectal sigmoid tumours are not taken into account.
The indicator of bladder cancer is the percentage of patients in whom radical lymph node dissection was performed (a minimum of 10 lymph nodes are removed as a result of a cystectomy).

Data source

The data were gathered from the Netherlands Cancer Registry (NKR) of the Association of Comprehensive Cancer Centres (VIKC). This registry contains data from the eight comprehensive cancer centres and comprises the entire Dutch population ('population-based'). Since 2008, data have been directly entered into the nationwide registry by specially trained staff who compile information from patient files in hospitals based on reports from the Dutch national pathology information system (PALGA). Once a year, the data are supplemented with information from the Dutch National Medical Registration (LMR) and other sources, if available. This ensures that the registry contains information on every patient diagnosed with cancer and on any cancer diagnosed. An estimated 95% of all cancer cases in the Netherlands are recorded in the database.

Remarks upon data

- The stage of the tumour is crucial in evaluating the guidelines.
- In addition, the patient's age and other disorders (comorbidity) should be taken into consideration when evaluating the application of specific treatments.
- If the patient is being treated in a trial, this should also be considered therapy in accordance with the guidelines. However, these data are not (yet) included in the cancer registry.

No.	Domain	Subgroup	Indicator	Details/ Source
12	Clinical trial participation		Participation in Clinical Trials	Greenberg (2005), table 3

Strategic goal: Increase use of evidence and innovation in decision-making
Indicator: Clinical trial participation
Definition: Number of patients recruited to clinical trials for chemotherapy, radiotherapy, and interventions studies by hospital

No.	Domain	Subgroup	Indicator	Details/ Source
13	Multidisciplinarity		Patient discussed at multidisciplinary forum	Most far reaching concept: Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92559

Patient discussed at multidisciplinary forum: MCCs Adherence to Standards

Definition	The percentage of reported MCCs that are meeting the minimum standards criteria
Calculation	$\frac{\text{Number of MCC Standards criteria met}}{\text{Total number of criteria required by MCCs Standards}} \times 100 =$ Percentage of MCCs meeting minimum standards
Analysis	• For Q3 2009/10 and Q3 2010/11 • By LHIN • For specific disease site attendance criteria, please go to: https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=63113 *Regions will not be penalized if a medical oncologist does not attend a Gynaecology MCC. Therefore, the denominator is either 8 or 9.
Considerations	• Percentages are based on low volume • We have restated FY09/10 results. In order to improve and maintain consistency the FY09/10 results have been reinstated and measured by the same methodology as FY10/11 results. Most regions will have a smaller hospital denominator.
Technical Specifications	• Quarterly MCC reporting process where the Regional MCC Coordinator submits and validates MCC performance Exclusions: • NA
Numerator	• Number of MCC Standards Criteria met
Denominator	• Total number of criteria required by MCCs Standards
Data Sources	• MCC Tracker Tool Self reported in MCC Data Excel Template, Cancer Care Ontario
Data Availability & Limitations	• Data is reported for Q3 2009/10 and Q3 2010/11 to CCO Limitations: • Not all hospitals are reporting MCCs data

Multidisciplinary Cancer Conference Standards under
https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=14318

No.	Domain	Subgroup	Indicator	Details/ Source
14	Multidisciplinarity	Communication	Treatment summary	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/oncology-worksheets.pdf Measure #5 and # 6

Treatment Summary Communication – Radiation Oncology
This measure may be used as an Accountability measure.

Clinical Performance Measure
Numerator: Patients who have a treatment summary* report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment Definition: *Treatment Summary: a report that includes mention of all of the following components: 1) dose delivered; 2) relevant assessment of tolerance to and progress towards the treatment goals; and 3)subsequent care plans **Denominator**: All patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy **Denominator Exceptions:** Documentation of a patient reason(s) for not communicating the treatment summary report to the physician(s) providing continuing care (eg, patient requests that report not be sent) and to the patient within one month of completing treatment Documentation of a system reason(s) for not communicating the treatment summary report to the physician(s) providing continuing care (eg, patient does not have any physician responsible for providing continuing care) and to the patient within one month of completing treatment **Measure:** Percentage of patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure: A summary should be generated that accurately describes the treatment process, the doses delivered to the target/tumor volume and other key organs, relevant assessment of tolerance to and progress towards the treatment goals, and subsequent care plans. The style will reflect the radiation oncologist's individual practice convention and the referral provider's needs. The style, content, and detail of this summary must be tailored to the clinical setting and prevailing practice norms. It should contain elements that accurately and succinctly reflect the program of care administered in a language understandable to the non-radiation oncologist. It is suggested that, the report to the referring physician include a request for periodic updates on the patient's progress. These updates will facilitate continuity of care should the patient require further radiation therapy. (not ranked) (ACR7)
Rationale for the measure: Timely, accurate, and effective communications are critical to quality and value in contemporary medical practices. As both a consultant oncologist and the provider of radiation oncology services, the radiation oncologist has a dual role. Radiation therapy incorporates the science of complex, integrated treatment delivery and the art of individual cancer management. Through written focused reports and direct communications, the contribution of radiation oncologists concerning patient care, responsible utilization, and quality are provided, especially to primary care physicians, other oncologists and specialists, and allied healthcare providers (nurses, tumor registrars, quality assurance personnel, third-party reviewers, etc). (ACR7)

Data capture and calculations:
Calculation for *Performance*
For performance purposes, this measure is calculated by creating a fraction with the following components: Numerator, Denominator, and Denominator Exclusions.
Performance Numerator (A) Includes:
Patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment

Performance Denominator (PD) Includes:
All patients, regardless of age, with a diagnosis of cancer AND

Patients who have undergone brachytherapy or external beam radiation therapy

Performance Denominator Exceptions (C) Include:
Documentation of patient reason(s) for not having a treatment summary report in the chart that was communicated to the physician(s) providing continuing care (eg, patient requests that report not be sent) and to the patient within one month of completing treatment

Documentation of system reason(s) for not having a treatment summary report in the chart that was communicated to the physician(s) providing continuing care (eg, patient does not have any physician responsible for providing continuing care) and to the patient within one month of completing treatment

Performance Calculation

A (# of patients meeting measure criteria) **divided by**
PD (# of patients in denominator) – C (# of patients with valid denominator exclusions)

Components for this measure are defined as:
A
# of patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
PD
# of patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy
C
# of patients with documented patient or system reason(s) for not having a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
Calculation for *Reporting*
For reporting purposes, this measure is calculated by creating a fraction with the following components: Reporting Numerator and Reporting Denominator
Reporting Numerator includes each of the following instances:
A. Patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment
C. Documented patient or system reason(s) for not having a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment

D. Patients who do not have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment and there is no documented reason for not doing so
Reporting Denominator (RD) Includes:
All patients, regardless of age, with a diagnosis of cancer AND

Patients who have undergone brachytherapy or external beam radiation therapy

Reporting Calculation

A(# of patients meeting numerator criteria) **+ C**(# of patients with valid exclusions) **+ D**(# of patients NOT meeting numerator criteria) **divided by**
RD (# of patients in denominator)

Components for this measure are defined as:
A
# of patients who have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment

C
# of patients who do not have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment but for whom there is a documented patient or system reason for not doing so
D
# of patients who do not have a treatment summary report in the chart that was communicated to the physician(s) providing continuing care and to the patient within one month of completing treatment and there is no documented reason for not doing so
RD
# of patients, regardless of age, with a diagnosis of cancer who have undergone brachytherapy or external beam radiation therapy

No.	Domain	Subgroup	Indicator	Details/ Source
15	Pain management	Assess-ment	Pain Assessment	Georgia Cancer Coalition Lorenz (2006): appendix F1

Description of Indicator: Routine assessment of pain.
Denominator: Number of cancer patient encounters.
Numerator: Number of cancer patient encounters where patient where patient was assessed for pain.
Disease: Mixed cancer

No.	Domain	Subgroup	Indicator	Details/ Source
16	Pain management	Assess-ment	Pain intensity quantified	University Health Consortium Lorenz (2006): appendix F1

Description of Measure: Routine inpatient pain assessment with a numeric scale.
Denominator: Adults > or = 18 years of age, with admission for CHF (DRG 127), Cancer (DRG 82, 203, 172, 274, 346, 10) HIV (DRG 489) OR respiratory (DRG 475, 483) AND length of stay > 4 days, 2 prior admissions for any cause in preceding 12 months in the hospital , AND reported pain within the 1st 48 hours of admission.
Numerator: Persons assessed with a numeric pain scale.
Disease: CHF, Mixed cancer, HIV, Mixed respiratory diseases

No.	Domain	Subgroup	Indicator	Details/ Source
17	Pain management	Treat-ment	Pain Treatment	RAND Lorenz (2006): appendix F1

Description of Measure: Responsive pain treatment.
Denominator: All cancer patients whose pain is uncontrolled.
Numerator: Patients offered a change in pain management within 24hours of the pain complaint.
Disease: Mixed cancer

No.	Domain	Subgroup	Indicator	Details/ Source
18	Dyspnea management	Treat-ment	Dyspnea treatment	University Health Consortium Lorenz (2006): appendix F2

Description of Measure: Timely treatment of inpatient dyspnea.
Denominator: Adults > or = 18 years of age, with admission for CHF (DRG 127), Cancer (DRG 82, 203, 172, 274, 346, 10) HIV (DRG 489) OR respiratory (DRG 475, 483) AND length of stay > 4 days, 2 prior admissions for any cause in preceding 12 months in the hospital, AND reported dyspnea within the 1st 48 hours of admission.
Numerator: Dyspnea relief or reduction within 48 hours of admission.
Disease: CHF, Mixed cancer, HIV, Mixed respiratory diseases

No.	Domain	Subgroup	Indicator	Details/ Source
19	Depression/ Emotional well-being	Assess-ment	Assessment emotional well-being	University Health Consortium Lorenz (2006): appendix F3

Description of Measure: Regular assessment for psychosocial well-being.
Denominator: Adults > or = 18 years of age, with admission for CHF (DRG 127), Cancer (DRG 82, 203, 172, 274, 346, 10) HIV (DRG 489) OR respiratory (DRG 475, 483) AND length of stay > 4 days, 2 prior admissions for any cause in preceding 12 months in the hospital.
Numerator: Formal psychosocial assessment up to 1 year prior to admission during a previous hospitalization OR within 4 days of index admission.
Disease: CHF, Mixed cancer, HIV, Mixed respiratory diseases

No.	Domain	Subgroup	Indicator	Details/ Source
20	General processes	Appropriate utiliza-tion radioation treatment	Radiation Treatment Utilization	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92612

Radiation treatment utilization

Definition	Proportion of patients receiving radiation treatment at any time during their illness
Calculation	• Estimated using Multi-cohort Current Utilization Table (MCUT) method. Reference: • J. Zhang-Salomons and W.J. Mackillop, "Estimating the lifetime utilization rate of radiotherapy in caner patients: The Multicohort Current Utilization Table (MCUT) method", Computer Method and Programs in Biomedicine, 92, (2008) 99-108.
Analysis	• For years from November 1 to October 31, 2004/05, 2005/2006, 2006/07, 2007/2008, 2008/09, 2009/2010. • By LHIN and overall
Considerations	
Technical Specifi-cations	• Benchmark rates were calculated previously using 2001-2002 data, based on the assumption that the appropriate rate could be approximated by the rates observed in communities where there are no barriers to access to care and no financial incentive to over treat patients. "No barriers" is measured by wait time (counties in which the wait time is shorter than the provincial average). "No financial incentive to over treat patient" means that the benchmark rates were

	calculated when radiation oncologists were paid a standard salary. They are now in private operation and fee for service is applied. • Percentage shortfall in the use of radiation treatment was calculated as the difference between observed rate and the rate in the benchmark communities, divided by the benchmark rate. Exclusions: • Radiotherapy given to in-situ and non-malignant diseases were excluded.
Numerator	• Radiotherapy given to cancer patients for treatment of cancer
Denominator	• Cancer cases diagnosed in Ontario as identified through the Ontario Cancer Registry
Data Sources	• Activity Level Reporting, Cancer Care Ontario • Ontario Cancer Registry, Cancer Care Ontario • Historical radiotherapy data from OPIS and PMH
Data Availability & Limitations	• Information on radiation treatment was incomplete for the county of Kenora, because a large proportion of patients residing in Kenora travel to the neighbouring province for treatment. As a result, the utilization rate in Kenora was not reported. Limitations: • The linkage rate of the radiation treatment data to the Ontario Cancer Registry is more than 99%. Assuming all the unlinked cases were attributable to the cancer cases in the Ontario Cancer Registry, this could under-estimate the utilization rate by less than 0.5%.

No.	Domain	Subgroup	Indicator	Details/ Source
21	Advanced Care Planning ACP	Preferences Assessment	Regular assessment of preferences in an ICU	Assessing the Care Of Vulnerable Elders ACOVE Lorenz (2006): appendix F4

Description of Measure: Regular assessment of preferences in an ICU.
IF a vulnerable elder is admitted directly to the intensive care unit from an outpatient or ER setting and survives 48 hours, THEN within 48 hours of admission, the medical record should document that the patient's preferences for care have been considered or that these preferences could not be elicited or are unknown.
Denominator: All vulnerable elderly patients admitted directly to the ICU from an outpatient or ER setting and surviving 48 hours.
Numerator: Number of vulnerable elders admitted directly to the intensive care unit from an outpatient or ER setting and surviving 48 hours with documentation in the medical record that the patient's preferences for care have been considered or that these preferences could not be elicited or are unknown within 48 hours of admission.
Disease: Mixed disease

No.	Domain	Subgroup	Indicator	Details/ Source
22	ACP	Preferences Follow-up	Care consistency with documented care preferences	Assessing the Care Of Vulnerable Elders ACOVE Lorenz (2006): appendix F4

Description of Indicator: Care consistency with documented care preferences.If a vulnerable elder has specific treatment preferences (e.g., a do-not-resuscitate order, no tube feeding, or no hospital transfer) documented in a medical record, THEN these treatment preferences should be followed.
Denominator: All vulnerable elderly patients in any health care setting with specific treatment preferences documented in their medical record.

Numerator: Number of vulnerable elders with specific treatment preferences documented in their medical record with those treatment preferences having been followed.
Disease: Mixed disease

No.	Domain	Subgroup	Indicator	Details/ Source
23	End-of-life		Death in acute-care bed	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397

End of Life Care – Death in Hospital

Definition	Percentage of cancer patients who died in acute care hospital
Calculation	Number of Cancer patients who died in hospital ——————————— X 100 = Percent of deaths in hospital Target Population (number of deaths)
Analysis	• For calendar years 2004 to 2007, by calendar year and LHIN
Considerations	• These results do not assess the quality of end-of-life care in detail. For example, the absence of emergency department visits does not necessarily mean good quality care. Some patients may not have visited the emergency department but may still have experienced poor symptom control or psychological distress. Individual palliative care patients may have specific needs or require specific expertise that is not routinely available in the home.
Technical Specifications	• Cause of death from Cancer defined by the following ICD9 diagnosis codes from the Ontario Cancer Registry: Head and Neck (140-149,160,161) Female Breast (174) Lung (162) Prostate (185) Ovary (183) Colorectal (153,154) CNS (191) Lymphoma/Leukemia (200-208) Other GU/ Gyne (179-182,184,186-189) Melanoma/Sarcoma (170-172, 176) Other GI (150-152, 155-159) Metastases (196-199) Other (163-165, 175,190,192-195) Non-melanoma skin (173) • Diagnosis on death certificate must be a cancer diagnosis • Death in hospital defined by discharge disposition of "death" • Local Health Integrated Network (LHIN) assignment is based on Postal Code Conversion file (PCCF+), version 5e Exclusions: • Invalid HINs • Death certificate only patient • Age <20 • Death within 30 days of major cancer surgery • Death outside of Ontario
Numerator	• Total number of cancer patients who died in hospital

Definition	Percentage of cancer patients who died in acute care hospital
Denominator	• Total number of deaths related to cancer
Data Sources	• Ontario Cancer Registry, Cancer Care Ontario • Discharge Abstract Data base, Canadian Institute for Health Information • Registered Person Database (RPDB), Ministry of Health and Long-Term Care
Data Availability & Limitations	• There is no palliative care minimum dataset that is being consolidated / collected by care giver teams. Such a database could help understand the demand for end-of-life care services and activities. • Non-medical data in CIHI and NACRS has been found to be very accurate (http://www.ices.on.ca/file/CIHI_DAD_Reabstractors_study.pdf); Canadian Institute for Health Information, Data Quality Documentation, Discharge Abstract Database, 2007–2008—Executive Summary (Ottawa, Ont.: CIHI, 2008, Canadian Institute for Health Information, CIHI Data Quality Study of Ontario Emergency Department Visits for Fiscal Year 2004–2005—Executive Summary (Ottawa: CIHI, 2008). • The cohort definition requires information about cause of death. There is a delay in the update of this variable in the OCR. Consequently, the most updated cohort only includes up to 2007.

No.	Domain	Subgroup	Indicator	Details/ Source
24	End-of-life		Emergency department visit	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397

End of Life Care – Visits to Emergency

Definition	Percentage of cancer patients who visited the emergency department up to two weeks before death
Calculation	$\frac{\text{Number of Cancer patients who visited emergency}}{\text{Target Population (number of deaths}} \times 100 =$ Percentage of cancer patients who visited the ER up to two weeks before death
Analysis	• For calendar years 2004 to 2007 , • Percentage of cancer patients, by calendar year and LHIN
Considerations	• These results do not assess the quality of end-of-life care in detail. For example, the absence of emergency department visits does not necessarily mean good quality care. Some patients may not have visited the emergency department but may still have experienced poor symptom control or psychological distress. Individual palliative care patients may have specific needs or require specific expertise that is not routinely available in the home.
Technical Specifications	• Cause of death from Cancer defined by the following ICD9 diagnosis codes from the Ontario Cancer Registry: Head and Neck (140-149,160,161) Female Breast (174) Lung (162) Prostate (185) Ovary (183) Colorectal (153,154) CNS (191) Lymphoma/Leukemia (200-208) Other GU/ Gyne (179-182,184,186-189) Melanoma/Sarcoma (170-172, 176)

Definition	Percentage of cancer patients who visited the emergency department up to two weeks before death
	Other GI (150-152, 155-159) Metastases (196-199) Other (163-165, 175,190,192-195) Non-melanoma skin (173) • Diagnosis on death certificate must be a cancer diagnosis • ER visit must be within 14 days of death date • Local Health Integrated Network (LHIN) assignment is based on Postal Code Conversion file (PCCF+), version 5e Exclusions: • Invalid HINs • Death certificate only patient • Age <20 • Death within 30 days of major cancer surgery • Death outside of Ontario • Patient in acute care all 14 days prior to death
Numerator	• Total number of cancer patients who visited the emergency room within 14 days of death
Denominator	• Total number of deaths related to cancer
Data Sources	• Ontario Cancer Registry, Cancer Care Ontario • National Ambulatory Care Reporting System, Canadian Institute for Health Information • Registered Persons Data Base, Ministry of Health and Long-Term Care
Data Availability & Limitations	• There is no palliative care minimum dataset that is being consolidated / collected by care giver teams. Such a database could help understand the demand for end-of-life care services and activities. • Non-medical data in CIHI and NACRS has been found to be very accurate (http://www.ices.on.ca/file/CIHI_DAD_Reabstractors_study.pdf); Canadian Institute for Health Information, Data Quality Documentation, Discharge Abstract Database, 2007–2008—Executive Summary (Ottawa, Ont.: CIHI, 2008, Canadian Institute for Health Information, CIHI Data Quality Study of Ontario Emergency Department Visits for Fiscal Year 2004–2005—Executive Summary (Ottawa: CIHI, 2008). • For the analysis of emergency department visit rates, data do not provide information about the appropriateness of the visit. • The cohort definition requires information about cause of death. There is a delay in the update of this variable in the OCR. Consequently, the most updated cohort only includes up to 2007.

No.	Domain	Subgroup	Indicator	Details/ Source
25	End-of-life		Intensive care unit admission	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397

End of Life Care – ICU

Definition	Percentage of cancer patients who were admitted to the ICU in the last two weeks of life
Calculation	Number of Cancer patients who were admitted to the ICU in the last two weeks of life / Total patients who died of cancer X 100 = Percentage of cancer patients admitted to the ICU in the last two weeks of life
Analysis	• For calendar years 2004 to 2007 , • Percentage of cancer patients who died of cancer, by calendar year and LHIN
Considerations	• These results do not assess the quality of end-of-life care in detail. For example, the absence of emergency department visits does not necessarily mean good quality care. Some patients may not have visited the emergency department but may still have experienced poor symptom control or psychological distress. Individual palliative care patients may have specific needs or require specific expertise that is not routinely available in the home.
Technical Specifications	• Cause of death from Cancer defined by the following ICD9 diagnosis codes from the Ontario Cancer Registry: Head and Neck (140-149,160,161) Female Breast (174) Lung (162) Prostate (185) Ovary (183) Colorectal (153,154) CNS (191) Lymphoma/Leukemia (200-208) Other GU/ Gyne (179-182,184,186-189) Melanoma/Sarcoma (170-172, 176) Other GI (150-152, 155-159) Metastases (196-199) Other (163-165, 175,190,192-195) Non-melanoma skin (173) • Diagnosis on death certificate must be a cancer diagnosis • The ICU visits are captured by Discharge Abstract Database. ICU stays were identified using ICU admit date (scuadmdate1-6), and ICU discharge date (scuddate1-6). • ICU admission must be within 14 days of death date • Local Health Integrated Network (LHIN) assignment is based on Postal Code Conversion file (PCCF+), version 5e Exclusions: • Invalid HINs • Death certificate only patient • Age <20 • Death within 30 days of major cancer surgery • Death outside of Ontario
Numerator	• Number of Cancer patients who were admitted to the ICU in the last two weeks of life
Denominator	• Total number of deaths related to cancer
Data Sources	• Discharge Abstract Database, Canadian Institute for Health Information

	• Ontario Cancer Registry, Cancer Care Ontario • Registered Person Database (RPDB), Ministry of Health and Long-Term Care
Data Availability & Limitations	• There is no palliative care minimum dataset that is being consolidated / collected by care giver teams. Such a database could help understand the demand for end-of-life care services and activities. • Non-medical data in CIHI and NACRS has been found to be very accurate (http://www.ices.on.ca/file/CIHI_DAD_Reabstractors_study.pdf); Canadian Institute for Health Information, Data Quality Documentation, Discharge Abstract Database, 2007–2008—Executive Summary (Ottawa, Ont.: CIHI, 2008, Canadian Institute for Health Information, CIHI Data Quality Study of Ontario Emergency Department Visits for Fiscal Year 2004–2005—Executive Summary (Ottawa: CIHI, 2008). • The cohort definition requires information about cause of death. There is a delay in the update of this variable in the OCR. Consequently, the most updated cohort only includes up to 2007.

No.	Domain	Subgroup	Indicator	Details/ Source
26	End-of-life		Chemotherapy in the last two weeks of life	Cancer Quality Council Ontario http://www.cqco.ca/cms/One.aspx?portalId=89621&pageId=92397

Chemotherapy in the Last Two Weeks of Life

Definition	Percentage of patients who died of cancer who had chemotherapy in the last 2 weeks of life
Calculation	$\frac{\text{Patients with at least one chemotherapy claim with service date within the last 14 days of life.}}{\text{All patients in the cohort}} \times 100 =$ Percentage of patients who died of cancer who had chemotherapy in the last 2 weeks of life
Analysis	• For calendar years 2003 to 2007 • Analyses by LHIN • Analyses by disease site • Analyses by sex and by age
Considerations	• Since physicians may forget to submit a claim for supervising the delivery of chemotherapy, the observed rate may under-represent the real rate. This effect is likely small. These claims only represent intravenous chemotherapy and do not include hormonal treatment.
Technical Specifications	• Cohort: the Ontario Cancer Registry (OCR) was used to identify all patients who died of cancer, in 2003-2007, as indicated by the death certificate. When more than one record was present we chose the cause of death as the record which matched the registration diagnosis. Cases were excluded if: 1) the diagnosis of cancer was based solely on the death certificate; 2) the death occurred within 30 days of a major operative procedure; 3) the insurance number was not valid during the last 6 months of life; 4) the patient died outside of Ontario; 5) the patient was younger than 20 years of age. • Chemotherapy use: claims with OHIP fee codes indicating the delivery of chemotherapy.
Numerator	• Patients with at least one chemotherapy claim with service date within the last 14 days of life.
Denominator	• All patients in the cohort.
Data Sources	• Ontario Cancer Registry, Cancer Care Ontario • Ontario Health Insurance Plan database, Ministry of Health and Long-Term Care • Registered Persons Data Base, Ministry of Health and Long-Term Care
Data Availability	• The cohort definition requires information about cause of death. There is a delay in the update of this variable in the OCR. Consequently, the most updated cohort only includes up to

& Limitations	2007. • These claims would only represent the delivery of chemotherapy and would not potentially be submitted for some other kind of activity. No observations can be made about the type of chemotherapy that is give.

No.	Domain	Subgroup	Indicator	Details/ Source
27	End-of-life	Hospice/ Palliative care	Hospice enrolment	National Quality Forum NQF (2009a), A-14

Not admitted to hospice
Symptom Management and End-of-Life Care, Surveillance Measure

Intellectual Property Owner: Dana-Faber Cancer Institute
Numerator: Patients who died from cancer without being admitted to hospice. Those without claims in Medicare HOSPICE file.
Denominator: Patients who died from cancer.
Inclusions and/or Exclusions: None.

No.	Domain	Subgroup	Indicator	Details/ Source
28	End-of-life	Hospice	Admitted to hospice for less than	National Quality Forum NQF (2009a), A-14

Admitted to hospice for less than three days
Symptom Management and End-of-Life Care, Surveillance Measure

Intellectual Property Owner: Dana-Faber Cancer Institute
Numerator: Patients who died from cancer and spent fewer than three days in hospice.
Medicare HOSPICE file only: Subtracted hospice admission date (admitdate)from death date variable to get hospice length of stay.
Denominator: Patients who died from cancer.
Inclusions and/or Exclusions: None.

No.	Domain	Subgroup	Indicator	Details/ Source
29	End-of-life	Hospice	Family evaluation of hospice care	National Quality Forum NQF (2009a), A-9 Details on family evaluation survey: NQF (2009a), figure A-1, table A-1

Family evaluation of hospice care (FEHC)
Symptom Management and End-of-Life Care; Accountability, Quality Improvement, and/or Surveillance Measure

Intellectual Property Owner: National Hospice and Palliative Care Organisation NHPCO
Methodology: Responses to survey instrument. Family members of all patients enrolled in a hospice program. This tool is only for family members of patients who died following care.
Exclusions: Exclude patients who are not enrolled in a hospice program of have disenrolled from a hospice program. Live discharges are excluded.
Data source/ Reporting: Family members of deceased patients (survey responses).

Details on family evaluation survey: NQF (2009a), figure A-1, table A-1

No.	Domain	Subgroup	Indicator	Details/ Source
30	End-of-life	Dyspnea Assessment	Dyspnea assessed on either of the last two visits before death	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/palliative-care.pdf Measure #2
31	End-of-life	Dyspnea Treatment	Dyspnea addressed on either of the last two visits before death	American Medical Association and American Society of Clinical Oncology http://www.ama-assn.org/ama1/pub/upload/mm/pcpi/palliative-care.pdf Measure #2

Dyspnea Screening and Management

Palliative and End of Life Care

Measure Description

Percentage of patients with advanced chronic or serious life threatening illnesses that are screened for dyspnea. For those that are diagnosed with moderate or severe dyspnea, a documented plan of care to manage dyspnea exists.

Numerator	1. Patients who are screened for dyspnea. 2. Patients who are screened for dyspnea and diagnosed with moderate or severe dyspnea, who have a documented plan of care* to manage dyspnea *A documented plan of care includes: a plan for treatment of dyspnea, including but not limited to: nonpharmacologic treatments (e.g. repositioning, improving air circulation, relaxation techniques) and pharmacologic methods (e.g. oxygen, opioids, anxiolytics) OR a statement about why no intervention is undertaken AND a plan for assessment including indication of reassessment time or interval
Denominator	Patients with incurable cancer, organ system failure, or severe progressive neurological conditions (identified with ICD-9 code) AND Patients with a substantial risk of death within one year, based on the physician's clinical judgment integrating the patients co-morbidities, health status, social and other factors (identified with CPT-II code) OR Patients with advanced disease whose goals of care prioritize comfort (identified with CPT-II code)
Denominator Exclusions	None

Measure Importance

Relationship to desired outcome	Assessment and treatment of symptoms such as dyspnea are deemed critical for palliative care. Dyspnea is a symptom frequently seen in the end of life population. Identification and treatment (if necessary) of dyspnea improves quality of life at the end of life.
Opportunity for Improvement	While no published data regarding a quality gap or variation in performance are available for this measure topic, the work group was in consensus that this is an aspect of care that is not regularly performed for all patients. Through implementation and testing of this measure, it is expected that we will be able to collect data that will help us demonstrate whether or not a gap in care or variation in performance exists
Exclusion Justification	This measure has no exclusions

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