INTRODUCTION TO CODING TREATMENTS: SOURCES, CODING SYSTEMS

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1. OVERVIEW

- 1. Introduction
- 2. Coding practices in Europe
- 3. What?
- 4. Data Sources by methods of access
 - 1. Active versus passive registration
 - 2. Administrative data bases
- 5. Why?

2. CODING PRACTICES FOR TREATMENT IN EUROPE

Uses of cancer registries for public health and clinical research in Europe: Results of the European Network of Cancer Registries survey

Siesling S, Louwman WJ, Kwast A, van den Hurk C, O'Callaghan M, Rosso S, Zanetti R, Storm H, Comber H, Steliarova-Foucher E, Coebergh JW. Eur J Cancer 2015 Jun;51(9):1039-49.

Survey results

- 161population based cancer registries: 66%response, 2010-2012
- 33 countries (23 national coverage)
- Collection of any treatment-related item and stage: 61% of registries
- Collection of stage : 88% of all resp. registries
- 80% indicates to perform or facilitate clinical evaluative research
- <20% report routine use for cancer surveillance practices

Uses of cancer registries for public health and clinical research in Europe: Results of the European Network of Cancer Registries survey among 161 population-based cancer registries during 2010–2012

S. Siesling, W.J. Louwman, A. Kwast, C. van den Hurk, M. O'Callaghan, S. Rosso, R. Zanetti, H. Storm, H. Comber, E. Steliarova-Foucher, J.W. Coebergh EJC, Volume 51, Issue 9, Pages 1039-1049 (June 2015)



a) All general Cancer Registries combined (n=99)

Starting year of the CR and cumulative rate of recording of stage (dotted red line) and treatment data (solid/green line) in population-based cancer registries in Europe ordered geographically. (a) All general cancer Registries combined (n = 99),

3. WHAT? GLOBAL CATEGORIES OF TREATMENTS

- Surgery
- Radiotherapy
- Chemotherapy
- Systemic therapy other than chemotherapy
- Hormone therapy
- Bone marrow transplantation
- Stem cell transplantation
- Concomitant chemo- and radiotherapy
- Watchful waiting / Active surveillance
- Refusal therapy
- No active therapy
- o Unknown

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=> ENCR:



3. WHAT? SPECIFIC CODING OF PROCEDURES (1)

- Surgery
 - ICD-9 procedures
 - ICD-10 PCS (procedure classification system)
 - OBB48ZX: Excision of right upper lobe bronchus, via natural or artificial opening Endoscopic, Diagnostic
 - OBTCOZZ: Resection of Right Upper Lung Lobe, Open approach
 - Snomed CT
 - 'Home made' listings of surgical procedures
 - E.g. nomenclature of health insurances
 - E.g. cancer registries
 - Tumour specific lists



EXAMPLE ICD-10 PROCEDURE CODING

Section	0 Medical and Surgical V				
Body System	B Respiratory System				
Operation	T Resection	Cutting out or off, without replacement, all of a body part			of a body part
Code Description 0BT40ZZ Resection of Right Upper Lobe Bronchus, Open Approach					
Body Part Clear		Approach	Clear	Device	Qualifier
 1 Trachea 2 Carina 3 Main Bronchu 4 Upper Lobe E 5 Middle Lobe 6 Lower Lobe F 7 Main Bronchu 8 Upper Lobe E 9 Lingula Bronchu 8 Upper Lung I C Upper Lung I G Upper Lung I G Upper Lung I G Upper Lung I K Lung, Right L Lung, Left M Lungs, Bilate R Diaphragm, F S Diaphragm, I 	us, Right Bronchus, Right Bronchus, Right Bronchus, Right us, Left Bronchus, Left chus Bronchus, Left Lobe, Right Lobe, Right Lobe, Right Lobe, Left a Lobe, Left eral Right Left	• 0 Open • 4 Percut	taneous Endoscopi	c • Z No Device	● Z No Qualifier

EXAMPLE ICD-10 Procedure: Radiotherapy

Section	D Radiation Therapy 🗸				
Body System	V Male Reproductive System				
Modality	1 Brachytherapy				
Code Description DV10B9Z Low Dose Rate (LDR) Brachytherapy of Prostate using Iodine 125 (I-125)					
Treatment Site Cl	ear	Modality Qualifier Clear	Isotope Clear	Qualifier	
● 0 Prostate ○ 1 Testis		 ● 9 High Dose Rate (HDR) ● B Low Dose Rate (LDR) 	 7 Cesium 137 (Cs-137) 8 Iridium 192 (Ir-192) 9 Iodine 125 (I-125) B Palladium 103 (Pd-103) C Californium 252 (Cf-252) Y Other Isotope 	● Z None	

SPECIFIC CODING: PHARMA

- ATC: Anatomical Therapeutic Chemical (ATC) classification system (WHO): 5 levels.
- o 1st letter: Code Contents Α Alimentary tract and metabolism Blood and blood forming organs В С Cardiovascular system D Dermatologicals G Genito-urinary system and sex hormones Systemic hormonal preparations, excluding sex hormones and insulins н J Antiinfectives for systemic use Antineoplastic and immunomodulating agents L Μ Musculo-skeletal system Nervous system Ν Ρ Antiparasitic products, insecticides and repellents R Respiratory system S Sensory organs ν Various

SPECIFIC CODING

Pharma

• ATC: Anatomical Therapeutic Chemical (ATC) classification system (WHO): 5 levels

A	Alimentary tract and metabolism (1st level, anatomical main group)
A10	Drugs used in diabetes (2nd level, therapeutic subgroup)
A10B	Blood glucose lowering drugs, excl. insulins (3rd level, pharmacological subgroup)
A10BA	Biguanides (4th level, chemical subgroup)
A10BA02	metformin (5th level, chemical substance)

• Defined daily dose (DDD)

Chemotherapy

ATC code	Generic name	Trade name
L01XX32	Bortezomib	VELCADE
L01XX17	Topotecan	HYCAMTIN
		TOPOTECAN
L01XX19	Irinotecan	IRINOTECAN HYDROCH
		САМРТО
		IRINOTECAN ACTAVIS
L01XX05	Hydroxycarbamide	HYDREA
L01XX14	Tretinoin	VESANOID
L01XX02	Asparaginase	KIDROLASE
L01XX11	Estramustine	ESTRACYT
L01XA03	Oxaliplatin	ELOXATIN
		OXALIPLATINE ACTAV
		OXALIPLATINE
L01XA02	Carboplatin	CARBOPLATIN
		PARAPLATIN
L01XA01	Cisplatin	SINPLATIN
		CISPLATIN
		PLATIDIAM
		PLATINEX
L01BC06	Capecitabine	XELODA
L01BC05	Gemcitabine	GEMZAR
L01BC02	Fluorouracil	FLUOROURACIL ACCOR

JRC TECHNICAL REPORTS - ENCR: A PROPOSAL ON CANCER DATA QUALITY CHECKES: ONE COMMON PROCEDURE FOR EUROPEAN CANCER REGISTRIES, V1.0 2014



WHO Collaborating Centre for Drug Statistics Methodology

News

ATC/DDD Index

ATC/DDD methodology

ATC

Structure and principles

Application for ATC codes

Application for ATC alterations

Application form

Lists of new ATC/DDDs and alterations

DDD

Structure and principles

Structure

In the Anatomical Therapeutic Chemical (ATC) classification system, the active substances are divided into different groups according to the organ or system on which they act and their therapeutic, pharmacological and chemical properties. Drugs are classified in groups at five different levels. The drugs are divided into fourteen main groups (1st level), with pharmacological/therapeutic subgroups (2nd level). The 3rd and 4th levels are chemical/pharmacological/therapeutic subgroups and the 5th level is the chemical substance. The 2nd, 3rd and 4th levels are often used to identify pharmacological subgroups when that is considered more appropriate than therapeutic or chemical subgroups.

The complete classification of metformin illustrates the structure of the code:

Contents

Structure Nomenclature Inclusion and exclusion criteria General principles for classification Classification of plain products Classification of combination products

TREATMENT: WHAT?

• GLOBAL CATEGORIES

• Surgery, hormone therapy,

• SPECIFIC CODING of PROCEDURES and PHARMA

• *0BTC0ZZ*: Resection of Right Upper Lung Lobe, Open approach



TREATMENT SCHEMES: EXAMPLE: ESOPHAGUS

Surgical options



4. DATA SOURCES BY METHODS OF ACCESS

- Active system:
 - Data abstracted DM
 - Medical files
 - Electronic patient file
 - Paper
 - MDT
 - Hospital discharge data

- Passive system:
 - Electronic patient file
 - Hospital discharge data
 - Nomenclature health insurances
 - Medical claims data
 - Pharma db
 - Pharmacy or Hospital based



4. DATA SOURCES

Data validation needed for both methods

- Comparability
- Timeliness
- Data validity
- Relevance
- Linkage methods



5) WHY?

- Cancer surveillance Public health
 - Descriptive: e.g. Elderly?
 - Comparisons within a region, country, EU, International...
 - Time to treatment (waiting list?)
 - Rare cancers
- Collaboration with clinical oncology
 - Adherence to guidelines?
 - Variability? Elderly? SES?
 - Process and outcome indicators
 - Volume-outcome? Bench mark
 - Selection of patients => Studies
 - Patient reported outcome measures (PROM/PREM)



A cancer registry is a basic tool for cancer surveillance

- a. To serve public health by monitoring changes in cancer occurrence and prognosis (epidemiology) and evaluating mass interventions like SCreening descriptive epidemiology: incidence, survival and prevalence.
- b. To serve oncology by studying access and variation in Quality of care and outcomes, including the patient perspective, and cause-specific mortality. The methods of quality of care research also include interpretation of context and regular feedback to the clinicians involved.

Eurocourse FP7, JW Coebergh et al. 2012



KCE REPORT 152





INCLUSION STAGE III COLON CANCER, 80+

Country	Patients
Denmark	1321
Sweden	1075
Belgium	2313
Netherlands	3071
Germany	1674



Adjuvant chemotherapy

RECTAL CANCER: ADJUSTED OR, 90 DAYS P.O. MORTALITY, POPULATION BASED, 2006-2011



CONCLUSION





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Eurocourse FP7, JW Coebergh et al. 2012

RADIOTHERAPY AFTER BREAST CONSERVING SURGERY 2001 VERSUS 2006, BELGIUM

Figure 19. Proportion of patients who received RT after breast conserving igure 20. Proportion of patients who received RT after breast conserving surgery: analysis per centre (2001).



Stordeur S, Vrijens F, Beirens K, Vlayen J, Devriese S, Van Eycken E. Kwaliteitsindicatoren in oncologie: borstkanker. Good Clinical Practice (GCP). Brussel: Federaal Kenniscentrum voor de Gezondheidszorg (KCE). 2010. KCE Reports 150A. D2010/10.273/99.

Radiotherapy after breast conserving surgery 2009-2011

Target: 90-98%

