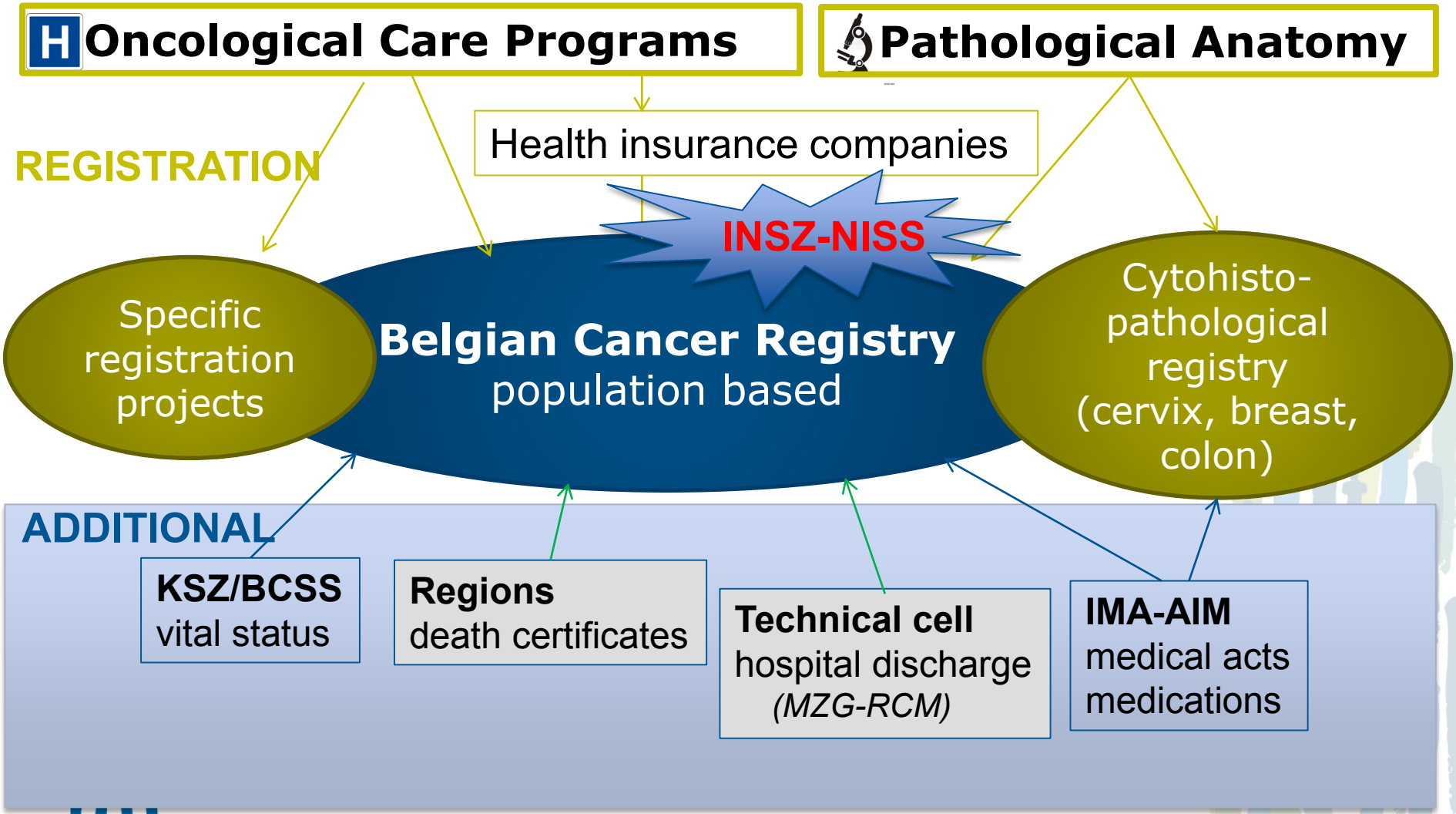
Belgian Cancer Registry

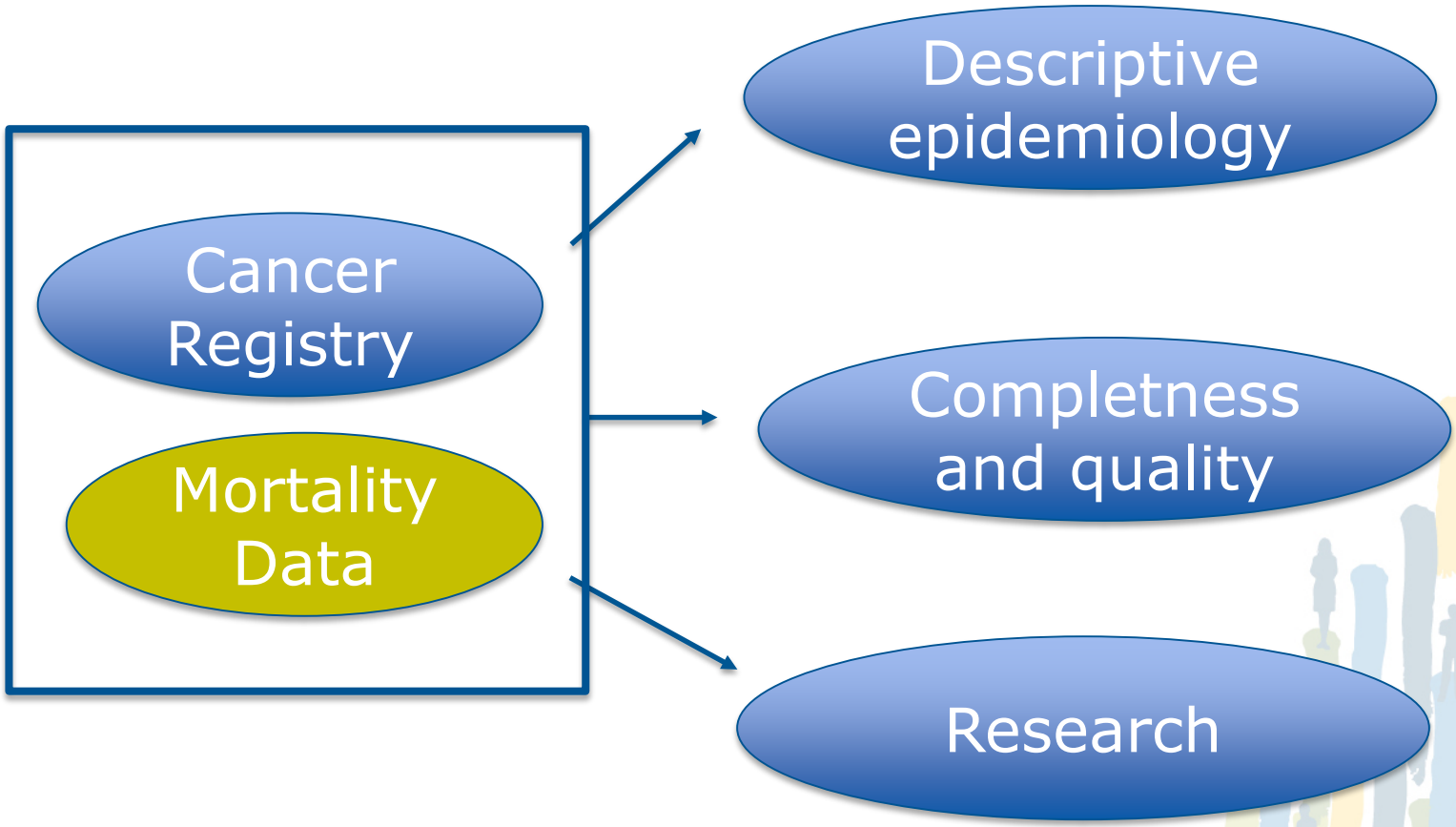
Cancer and Mortality: Complementary data

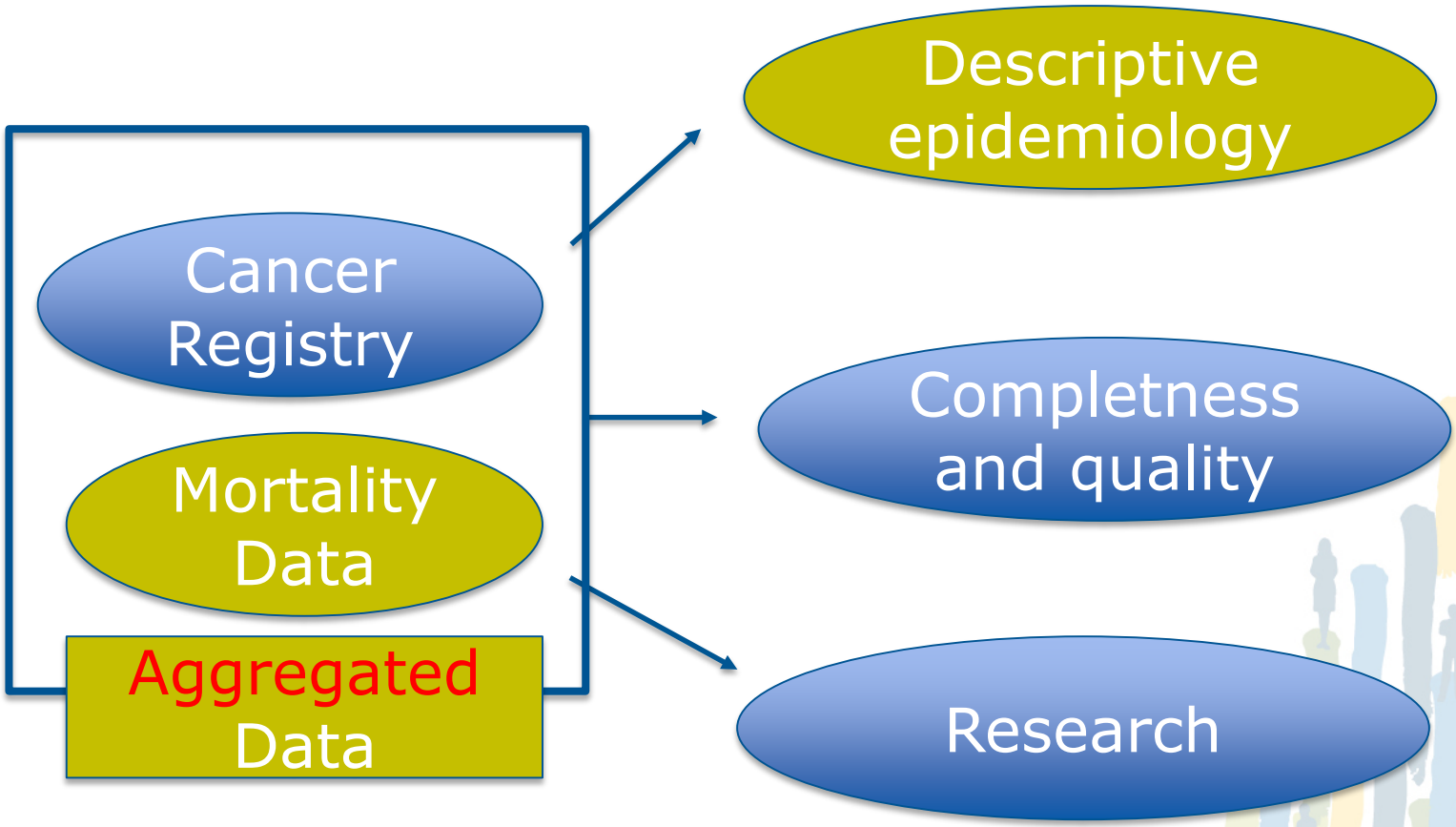
Workshop Data4research 25/01/2019

Julie Francart

Dataflows at the Belgian Cancer Registry




Cancer Registry
Mortality Data
Descriptive epidemiology
Completness and quality
Research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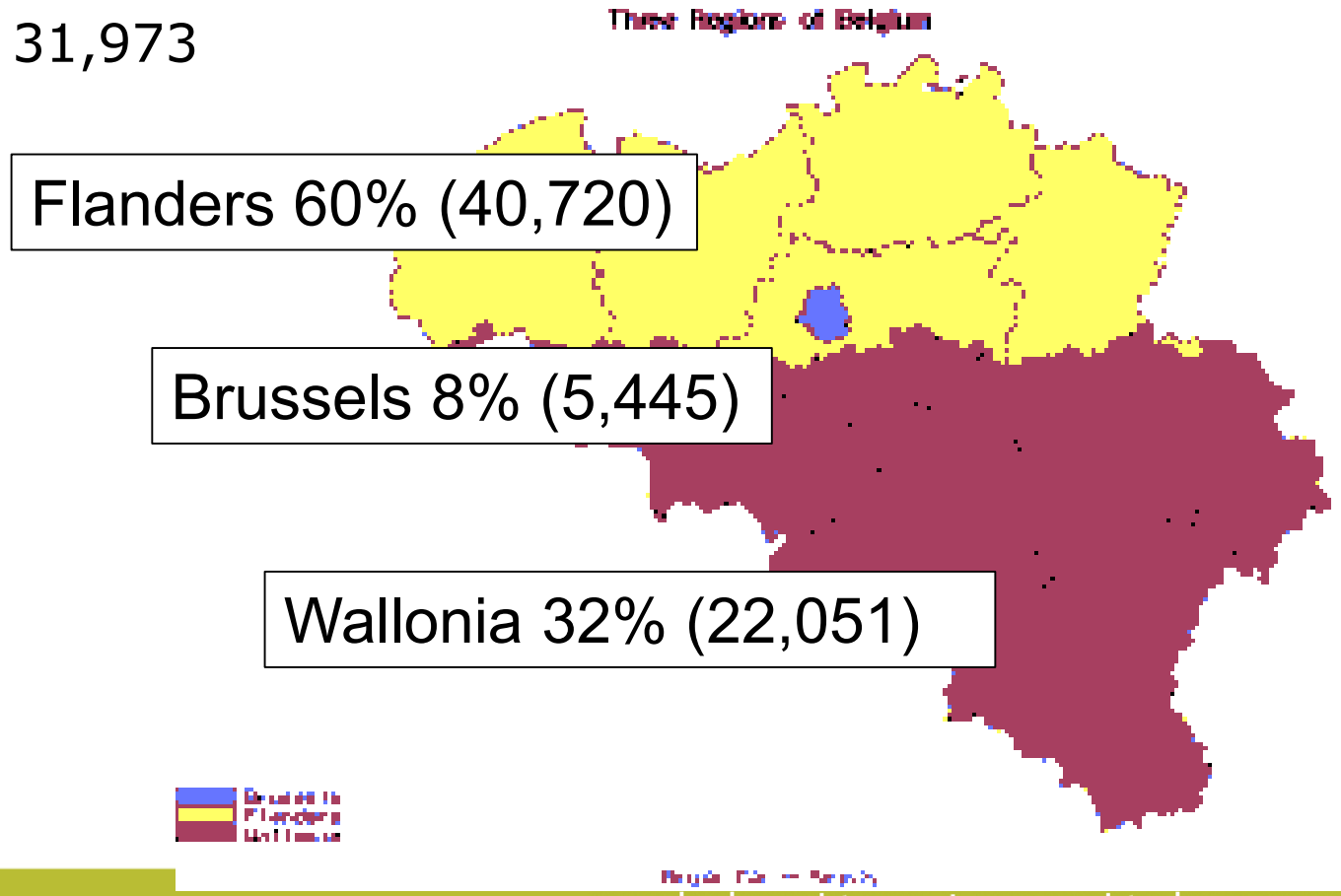
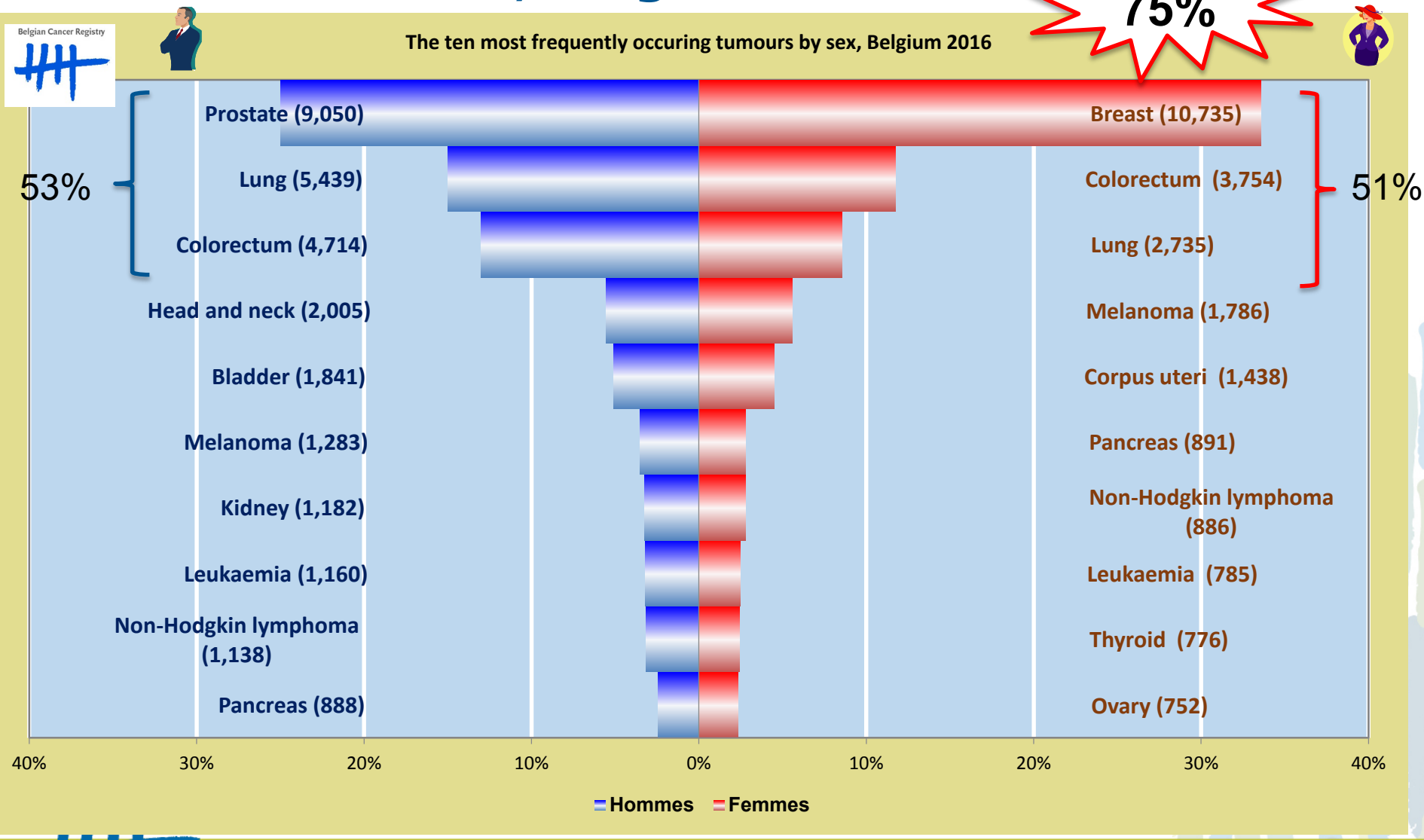
New diagnoses of cancer (excl non-melanoma), Belgium, 2016

- Belgium: 68,216
  - Males: 36,243
  - Females: 31,973

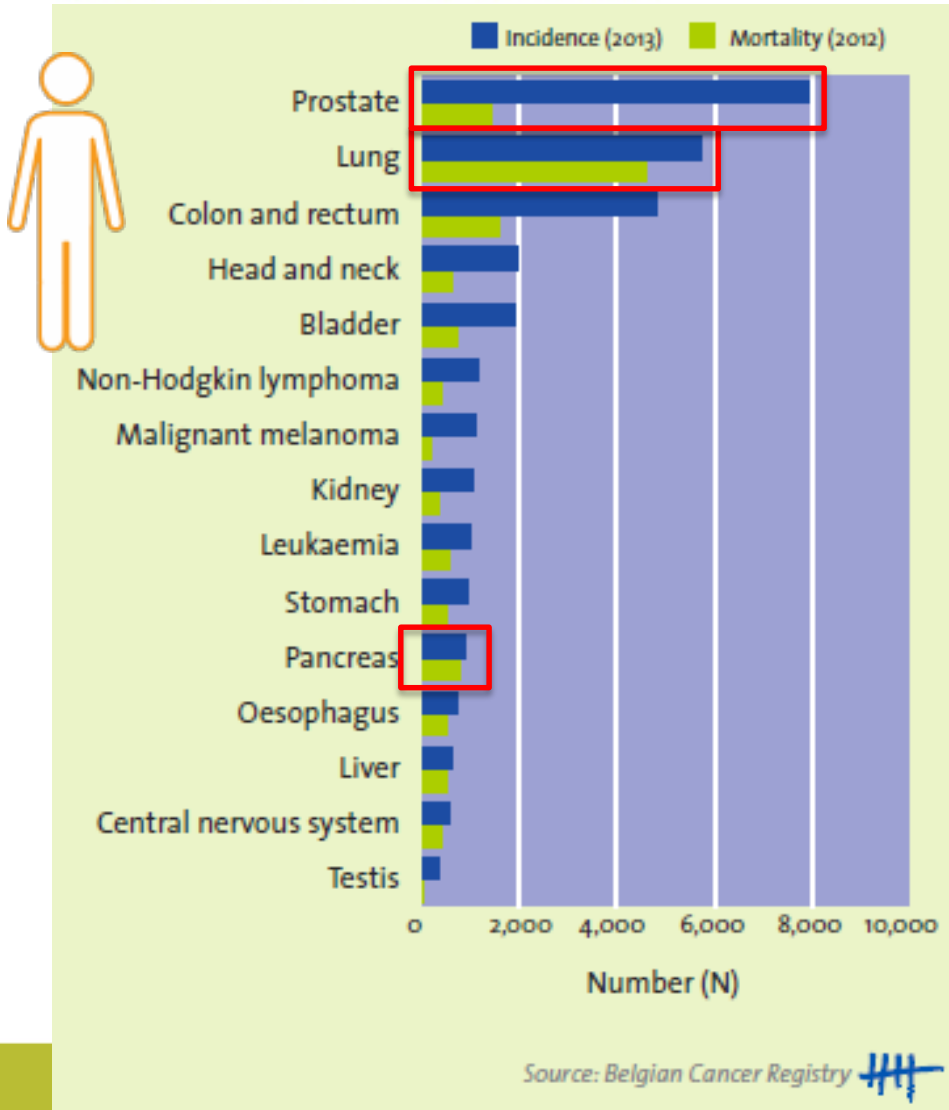


The ten most frequently occurring tumours by sex, Belgium 2016

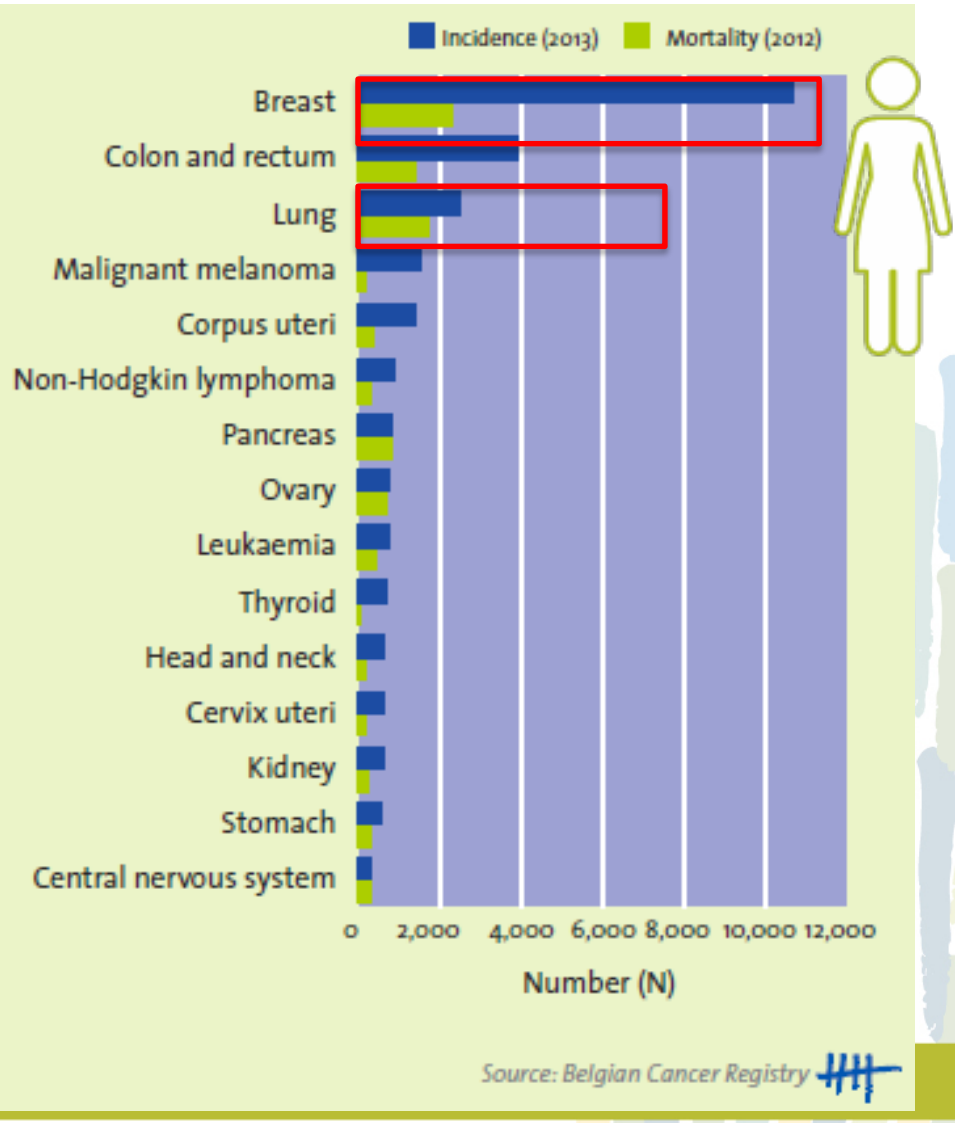


Relation incidence – mortality

Incidence (N) and mortality (N) for the 15 most frequently diagnosed malignancies (excl. non-melanoma skin cancer) by sex in Belgium

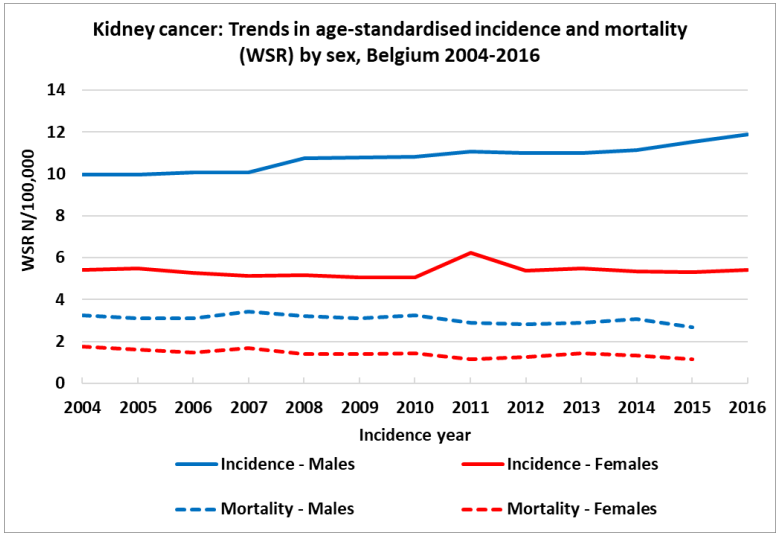


Source: Belgian Cancer Registry

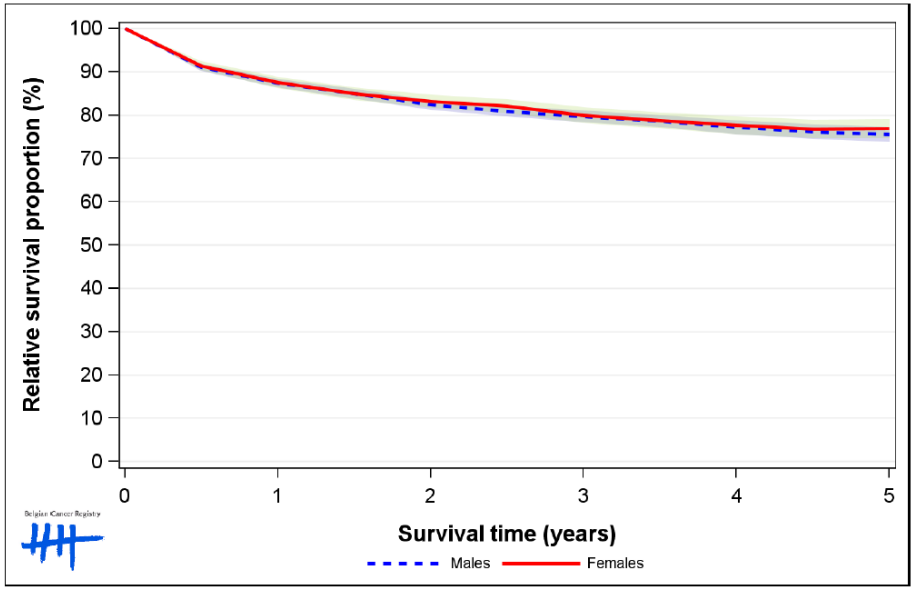


Source: Belgian Cancer Registry

Mortality/Incidence ratio: Proxy of survival Kidney Cancer



M/I ratio (2015): 30 %
-> Global survival~70%



Geographical differences in lifestyle (smoking)

Lung cancer incidence rates

Mortality rates for Chronic obstructive pulmonary diseases

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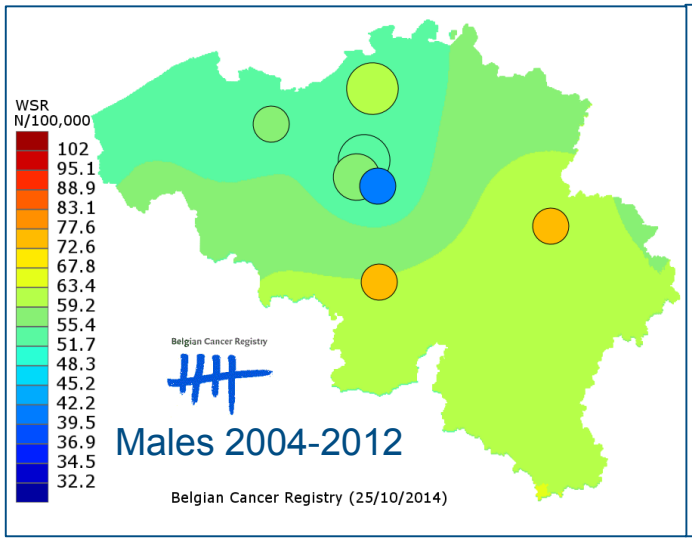
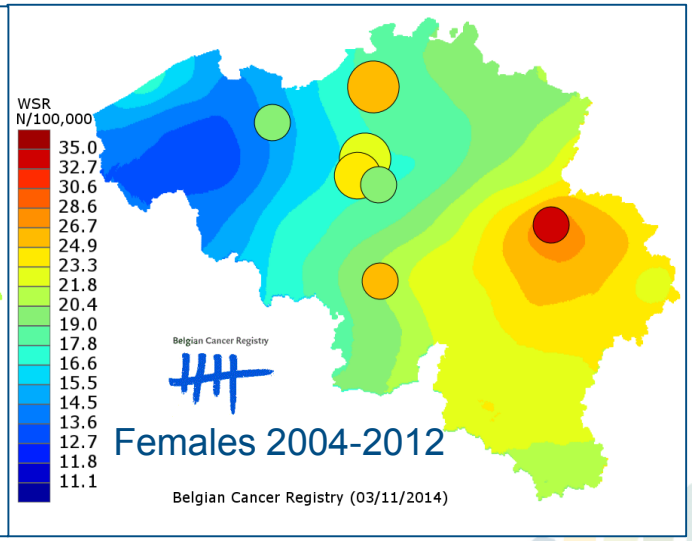
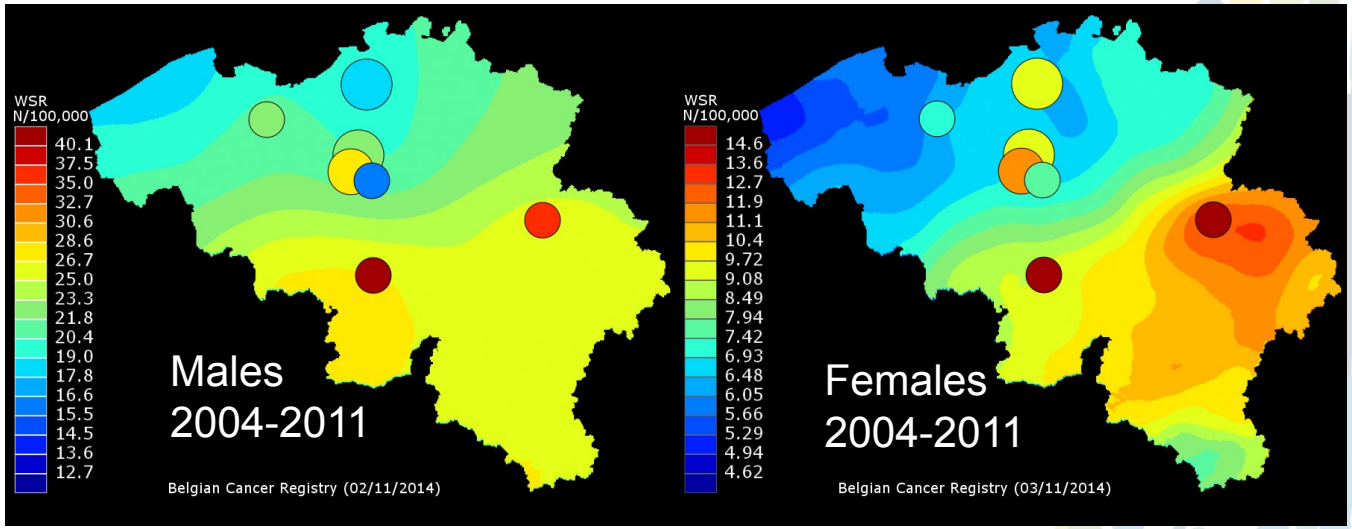
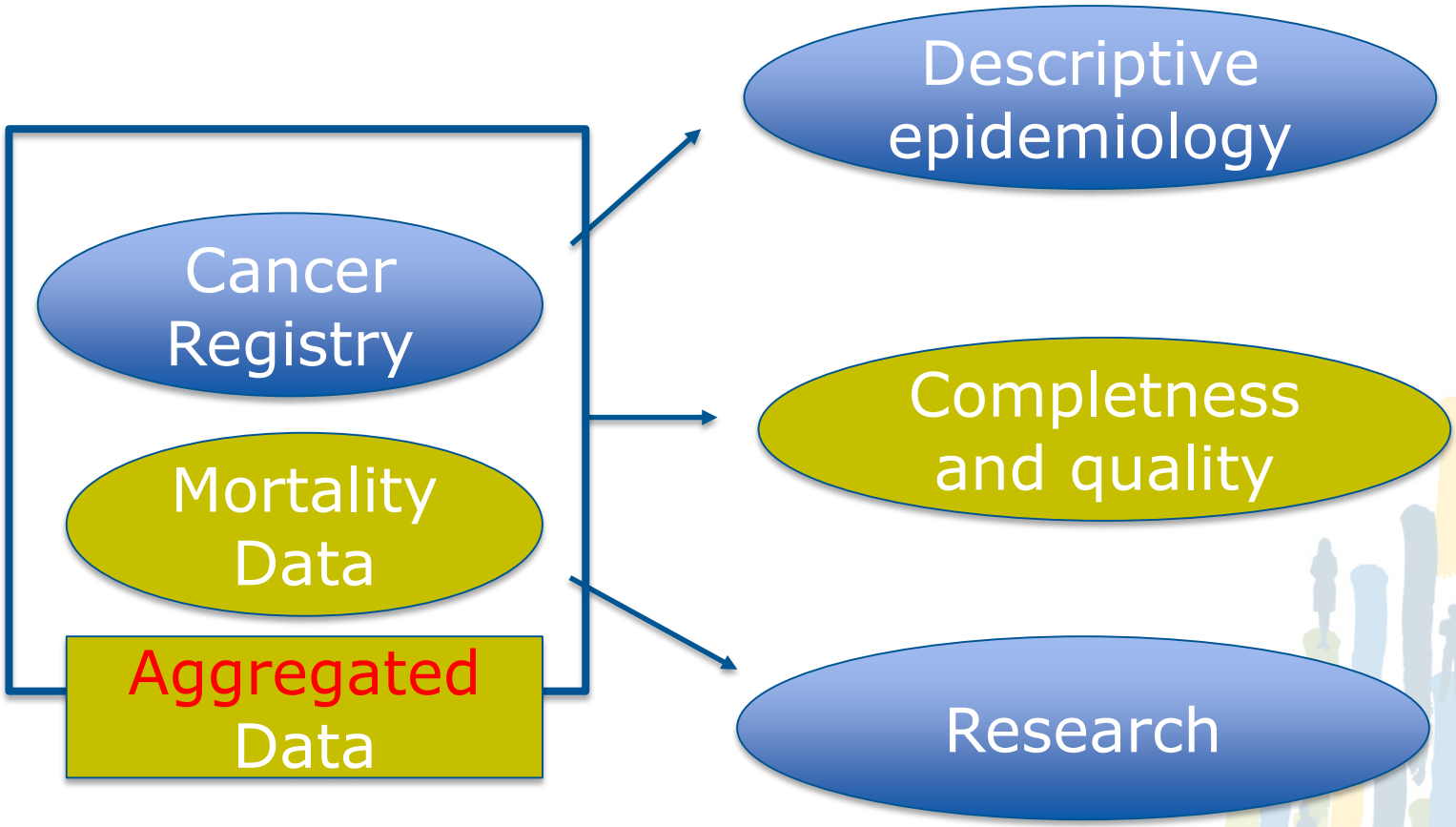
Smoking proxy







Belgian Cancer Registry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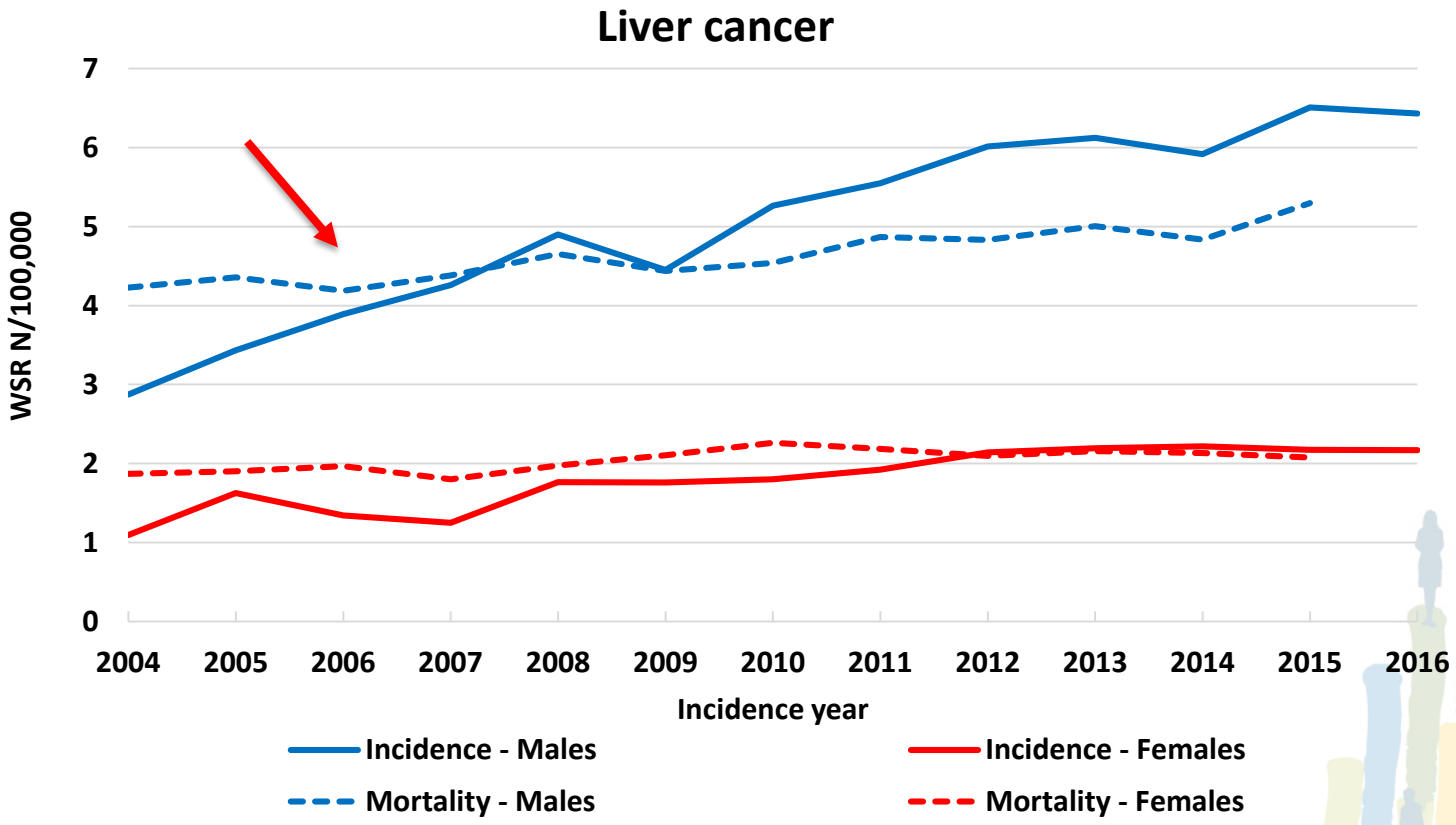
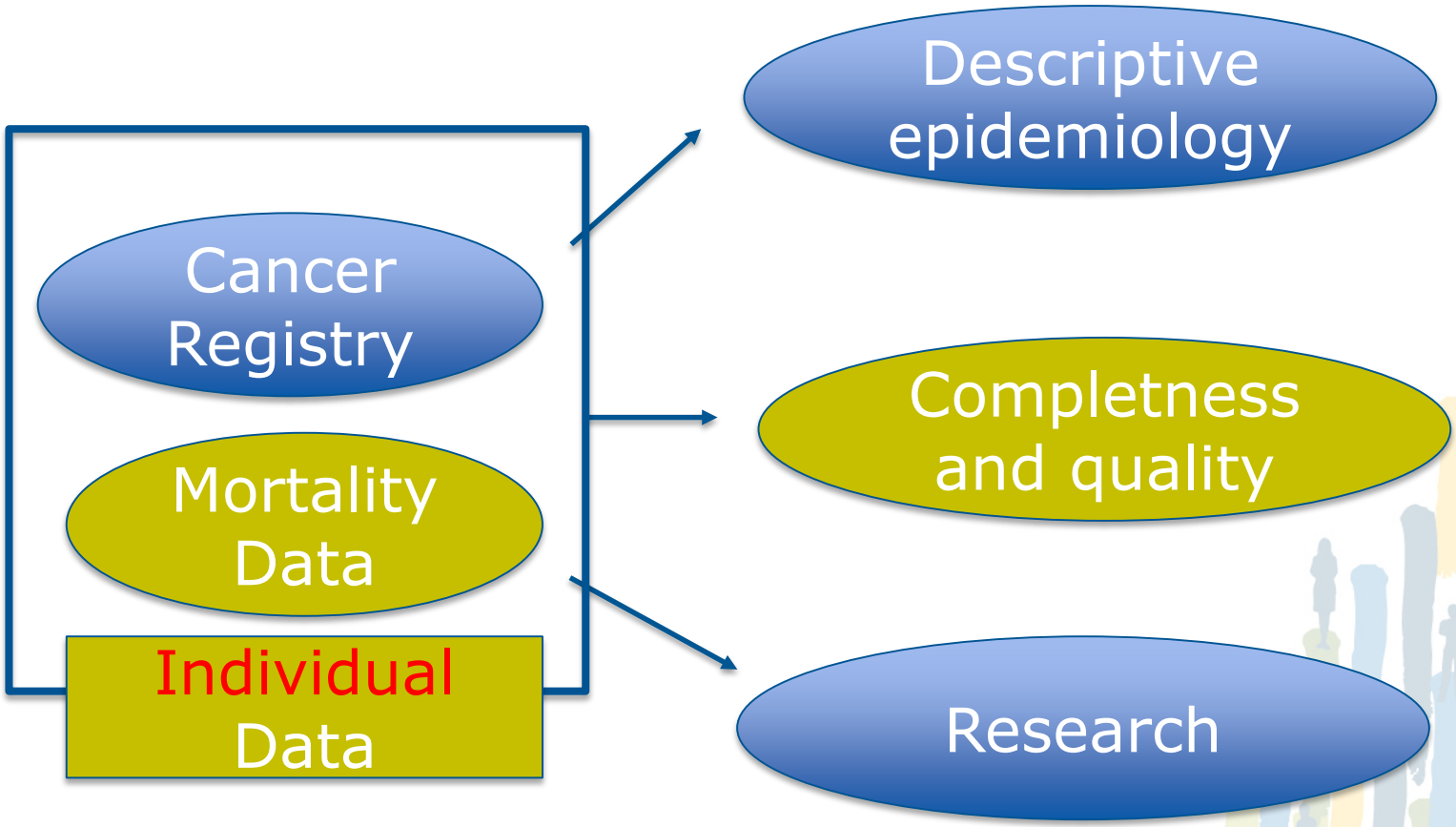
Trends in age-standardised incidence and mortality (WSR) by sex, Belgium 2004-2016



- Underregistration of liver cancers
- Inclusion of liver metastases in mortality data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Coupling with individual mortality data

- **Coupling with Cancer Registry 2004-2011 and certificate of Death (COD) until 31st December 2013 for Belgium:**

No INSZ/NISS → probabilistic coupling

key number	Keys	% coupled
Key1	NISCODE, date of birth, date of death, gender	89.65
Key2	date of birth, date of death, gender	5.78
Key3	NISCODE, date of birth	0.92
Key4	NISCODE, date of death, gender	1.42

→ **+/- 98% coupling with BCR database**

Project 'Trace back': Pancreatic cancer and Mesothelioma

- Selection of COD data BR/FL/WA 2004-2011:
  - Not coupled with CIB 2012 based on *birth date / death date / sex*
  - Containing "C" in at least one 'cause of death' variable *(but not C44)*
  - Place where patient died = **hospital (relevant for trace back procedure)**

→ 20792 records 2004-2011

	Frequency	Percent	Cumulative	Cumulative
Home	9461	23.19	9461	23.19
Hospital	20792	50.95	30253	74.14
Nursing home	9809	24.04	40062	98.18
Other	715	1.75	40777	99.93
Public road	26	0.06	40803	100.00
Work place	2	0.00	40805	100.00

Project 'Trace back':
Pancreatic cancer (C25) and Mesothelioma (C45)

COD 2004-2011
Not coupled with CIB2012
C25/C45 in at least one cause of death-variable

YEAR OF DEATH	C25	C45
2004	417	27
2005	428	25
2006	384	26
2007	354	23
2008	348	16
2009	309	16
2010	311	20
2011	286	12
Total	**2837**	**165**
Deceased in Hospital	**1459**	**71**

- UZ Leuven
- CHU Dinant/CHU Mont-Godinne

➡ **Limits:**

- **No INSZ-NISS**
- **No identification of hospital**

Mortality data +INSZ-NISS

IMA-AIM medical acts medications

Belgian Cancer Registry

→ **Trace back more complete and efficient**

Assessing the completeness and correctness of the registration of malignant mesothelioma in Belgium

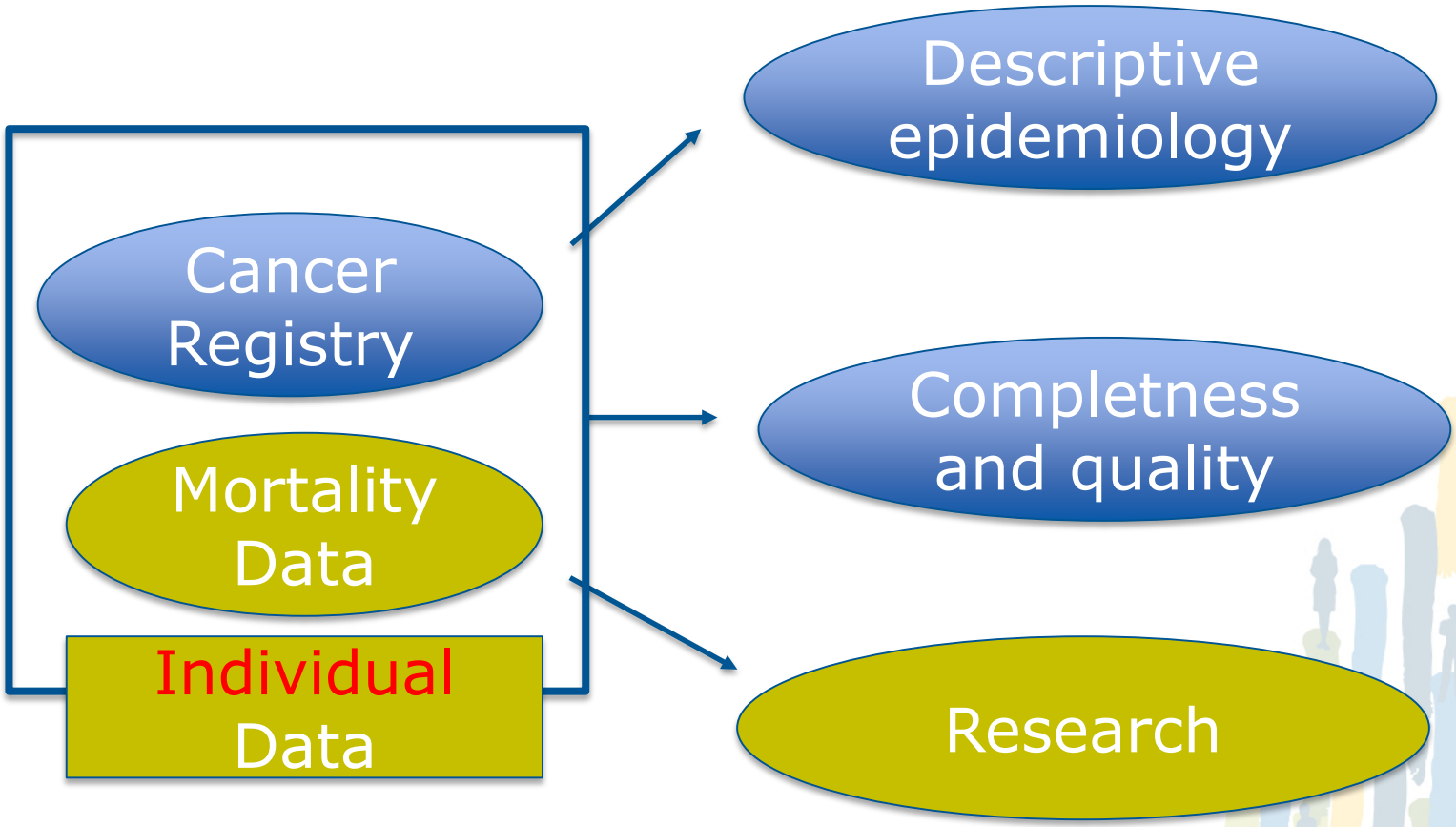
Michael Rosskamp[a,*,1], Harlinde De Schutter[a,1], Kris Henau[a], Kristiaan Nackaerts[b], Jan P. Van Meerbeeck[c], Marleen Praet[d], Liesbet Van Eycken[a]

This study aimed to assess the completeness and correctness of MM registration using 3 independent national databases: the Belgian Cancer Registry (BCR), the population-based mortality statistics (certificates of death, COD), and the Belgian Mesothelioma Registry (BMR).

Table 2

Distribution of malignant mesothelioma (MM) cases registered at the Belgian Cancer Registry (BCR) for which the certificates of death (COD) could be linked. COD data mentioned a ICD10: C45 as underlying cause of death (COD_UC) or any cause of death (COD_ALL), or no C45 mentioned in the causes of death, compared with the diagnosis made by the pathologists expert panel from the Belgian Mesothelioma Registry (BMR).

		Belgian Mesothelioma Registry (BMR)				
		MM	Other	No Diagnosis	Missing in BMR	Total
Belgian Cancer Registry (BCR) : MM (C45)	COD_UC = C45	1151 (80.5)	45 (65.2)	5 (45.5)	362 (67.5)	1563 (76.4)
	COD_ALL = C45	1192 (83.4)	46 (66.7)	5 (45.5)	374 (69.8)	1617 (79.1)
	COD ≠ C45	237 (16.6)	23 (34.3)	6 (54.5)	162 (30.2)	428 (20.9)
	Total	1429	69	11	536	2045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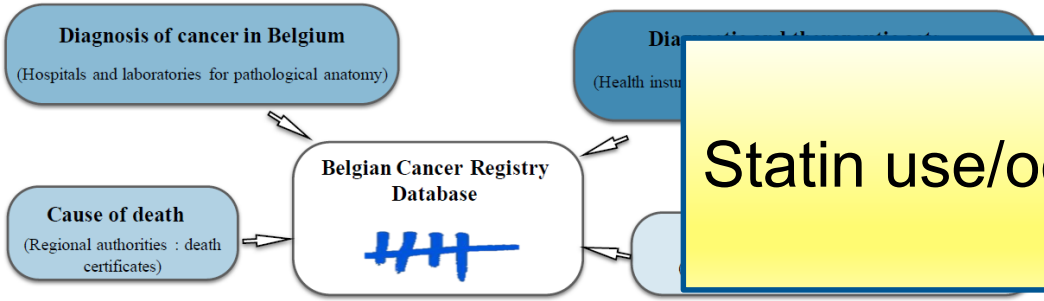
Pharmacoepidemiology

Statin use is associated with improved survival in ovarian cancer: a retrospective population-based study

Alexandra Coutenier, Olivia Lacroix, Harlinde De Schutter, Evelien Vaes, Annie Robert



Statin use/oesophageal cancer

Results of Time-dependent Cox regression models of the association between statins postdiagnostic use and all-cause mortality

Medication usage after diagnosis	Patients n	Deaths n (%)	Person-Years	Unadjusted HR [95% CI]	*P*	Adjusted[a] HR [95% CI]	*P*
Statin nonuser	4161	1619 (39)	10679.2	ref		ref	
Statin user	1255	420 (33)	2678.9	0.98 [0.88;1.09]	0.69	0.81 [0.72;0.90]	<.001

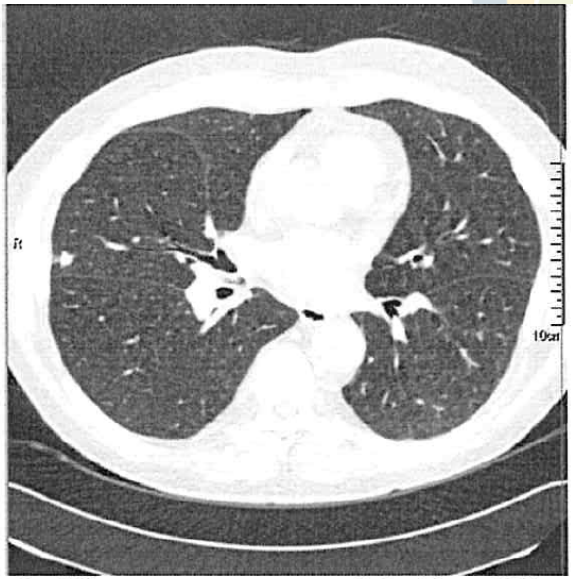
Similar results were observed for ovarian cancer-specific mortality.

Nelson study: Case control study

NELSON Study Shows CT Screening for Nodule Volume Management Reduces Lung Cancer Mortality by 26 Percent in Men

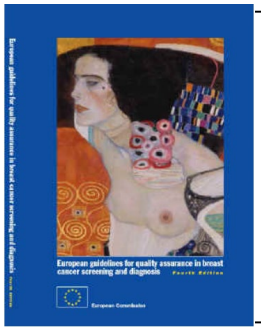
Persbericht 25-09-2018

CT-scan helpt bij vroegtijdig herkennen longkanker



Na 10 jaar werd bij 443 personen uit de screengroep longkanker ontdekt, terwijl in de controlegroep bij 394 personen longkanker aan het licht kwam, meestal naar aanleiding van klachten. In die controlegroep werd bijna 50% in het meest ongunstige en ongeneeslijke stadium (IV) gevonden, terwijl in de gescreende groep dat slechts bij 10% het geval was. De CT-scan kon dus jaren eerder een belangrijk vlekje in de longen als longkanker aanduiden en zo de behandeling vroeg opstarten. Na 10 jaar waren in de controlegroep 214 mannen overleden aan longkanker tegenover 157 mannen in de screengroep: een verschil van 26%. Opmerkelijk was dat onder de kleinere groep vrouwen die deelnam, het verschil in sterftecijfer nog groter was, rond de 40 tot 60%.

Impact of Screening on Breast Cancer Mortality



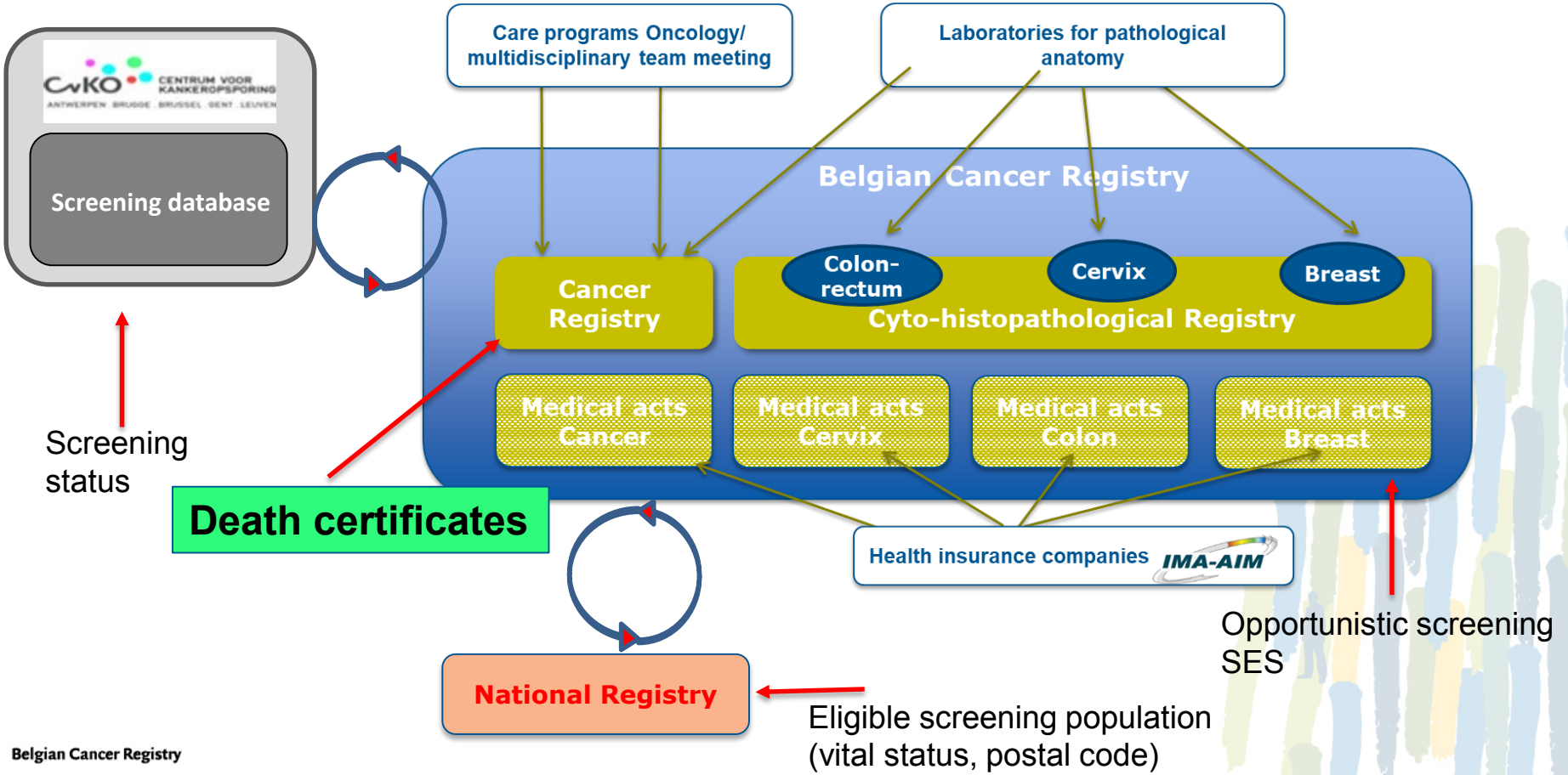
Fundamental points and principles

- In June 2003 the European Parliament called for establishment of a programme by 2008 which should lead to a future 25% reduction in breast cancer mortality rates in the EU and also a reduction to 5% in the disparity in the survival rates between member states (OJ C 68 E, 2004).

- **Matched case control study**: Eligible screening population
- **Event:** Died from breast cancer/any cause
- **Exposure:** Organized screening (ever/never)
- **Case:** Breast cancer patients who died from breast cancer/any cause
- **Controle:** Subjects age and geographically matched to cases
- **Sensitivity analysis:**
  - Impact of opportunistic screening
  - Impact of Socio economic profile (based on CT-status)

Impact of Screening on Breast Cancer Mortality

- Linkage of population based data bases




INSZ-NISS