



European Network of Cancer Registries

Estimating distant breast cancer recurrence in Belgium

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Workshop Recurrences, Granada, November 13th
2023

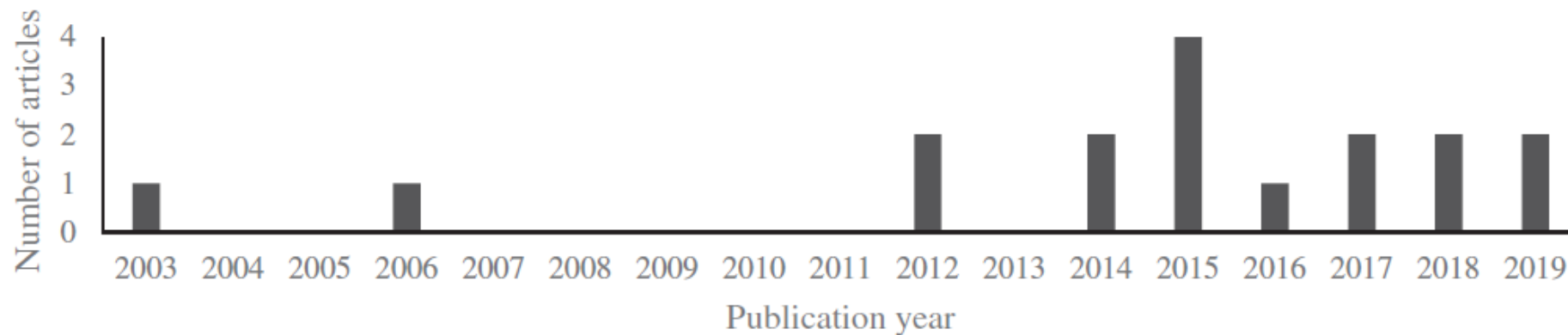


Breast cancer recurrence



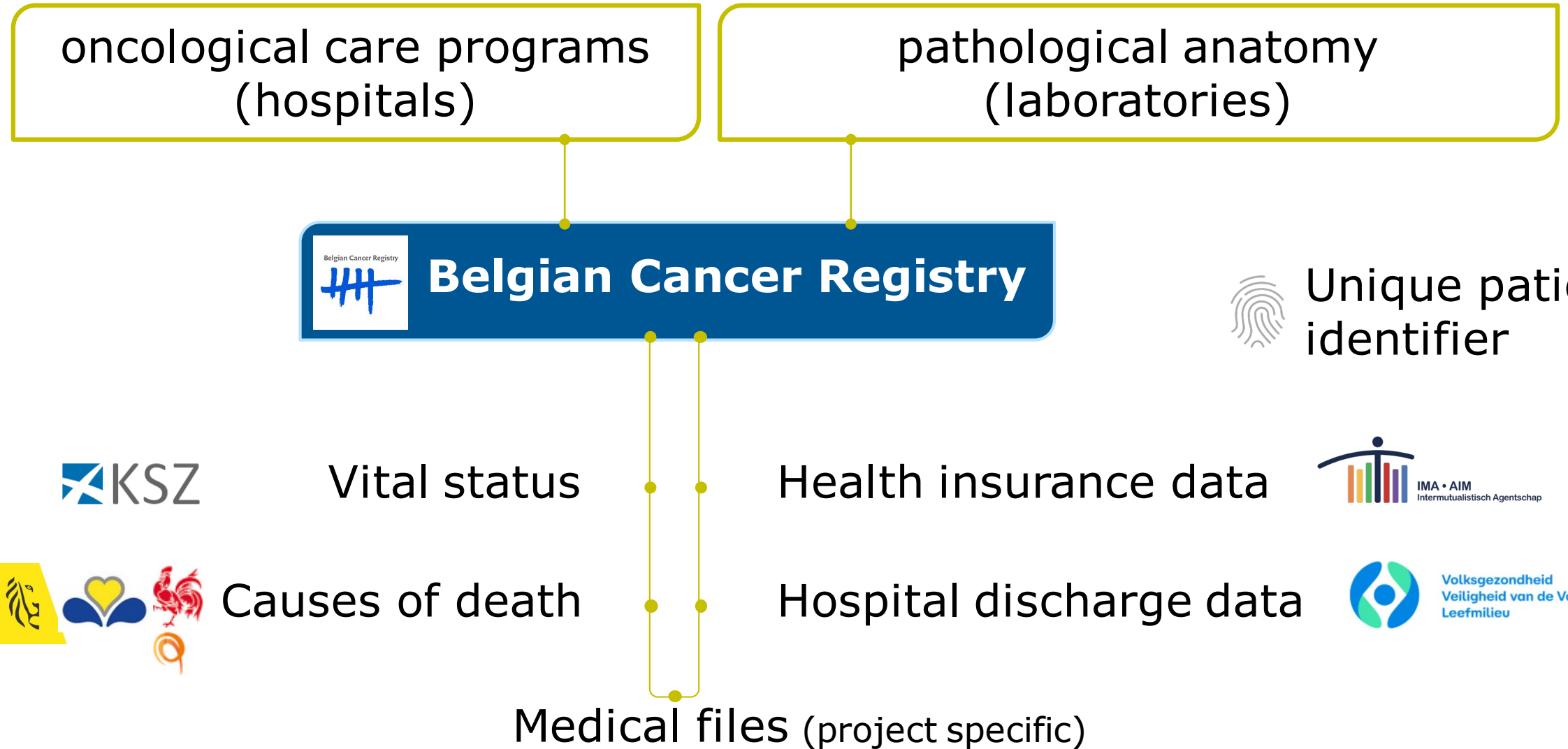
No population-based estimates

Administrative data?





Data availability at BCR





Gold standard clinical dataset

- 9 centers in Belgium
- Female breast cancer patients
 - 2009-2014
 - Excl.: stage IV, multiple tumors
- Manual review of patient files





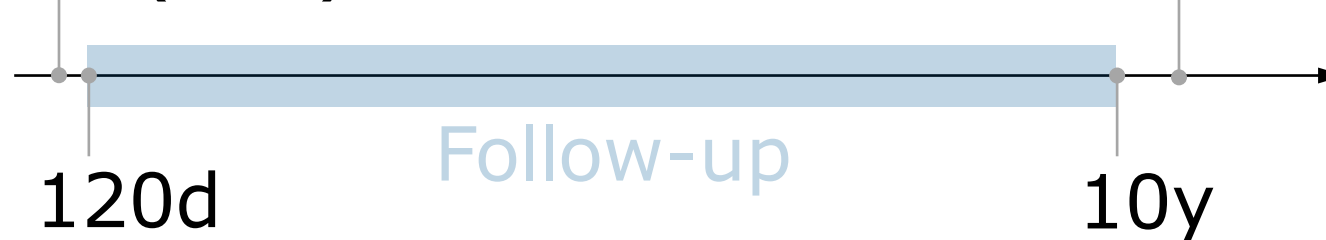
Gold standard clinical dataset

- Distant recurrence (incl. progression)
- Date of recurrence
(pathology > imaging > MDT*)



Diagnosis (C50)

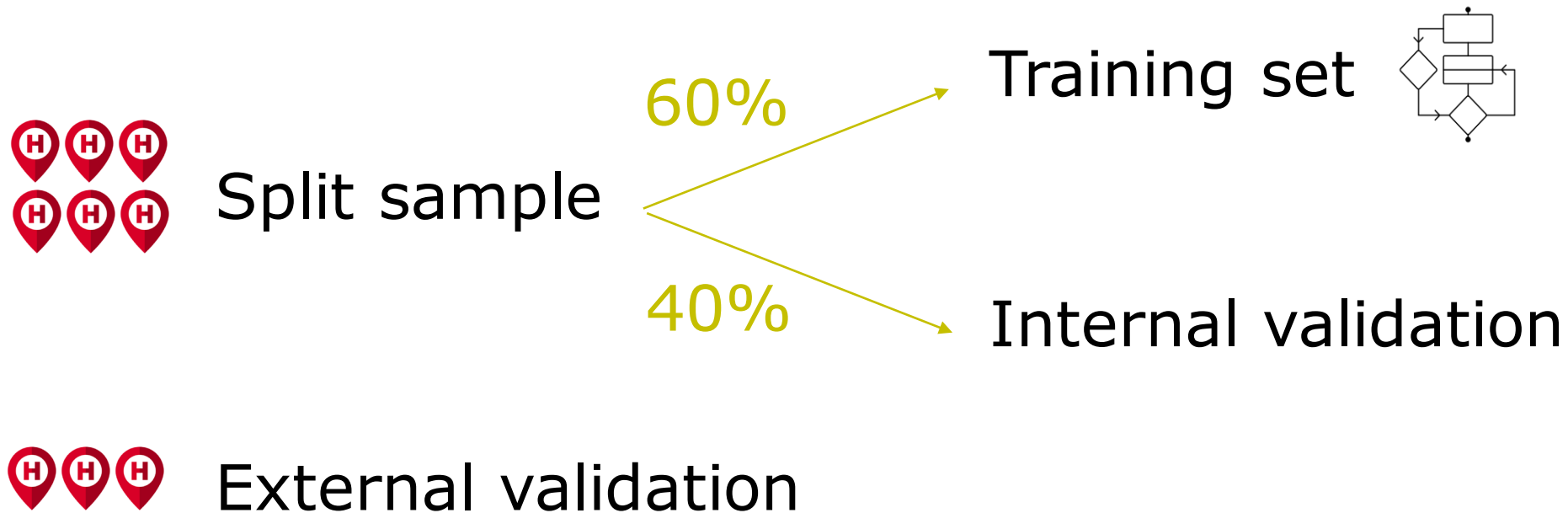
End of study (Dec 2018)





Gold standard clinical dataset

2.507 breast cancer patients included
8,6% distant recurrences during follow-up





Algorithm training & testing

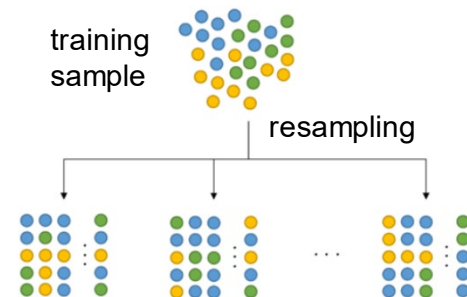
1

Identifying
administrative
data features

- Diagnostic –
therapeutic – other
- Occurrence – timing
– frequency

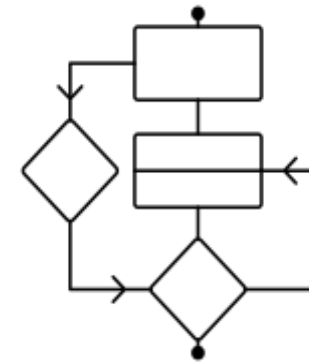
2

Selecting
administrative
data features:
Bootstrapping



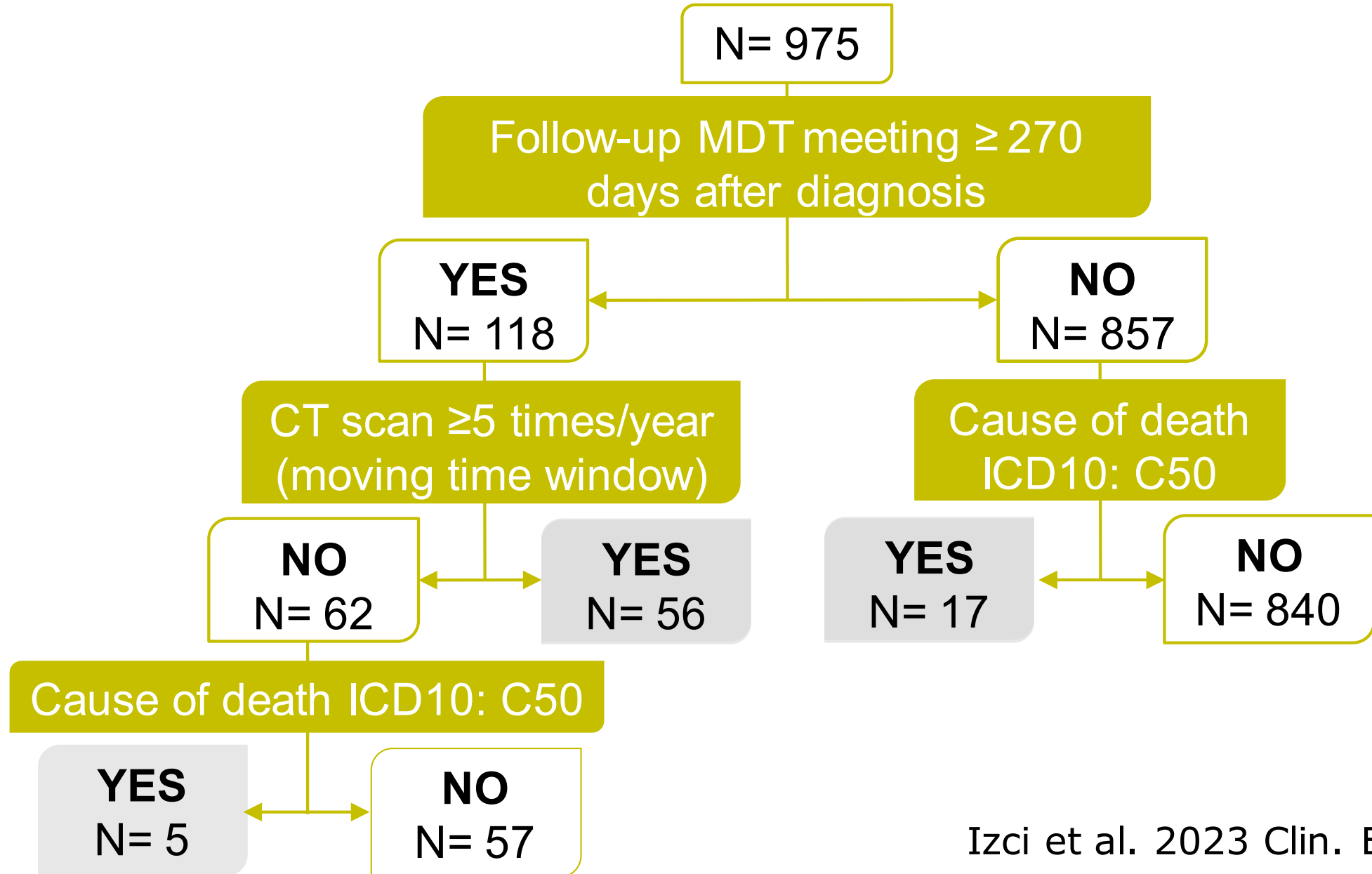
3

Algorithm
development:
CART*





Algorithm training & testing





Algorithm training & testing

	TP	TN	FN	FP	Sens.	Spec.	PPV	NPV
Training set	62	881	16	16	80%	98%	80%	98%
Cross validation	56	881	22	16	72%	98%	78%	98%
Internal validation	47	635	9	22	84%	97%	68%	99%
External validation	69	724	13	13	84%	98%	84%	98%



Breast cancer recurrence in Belgium

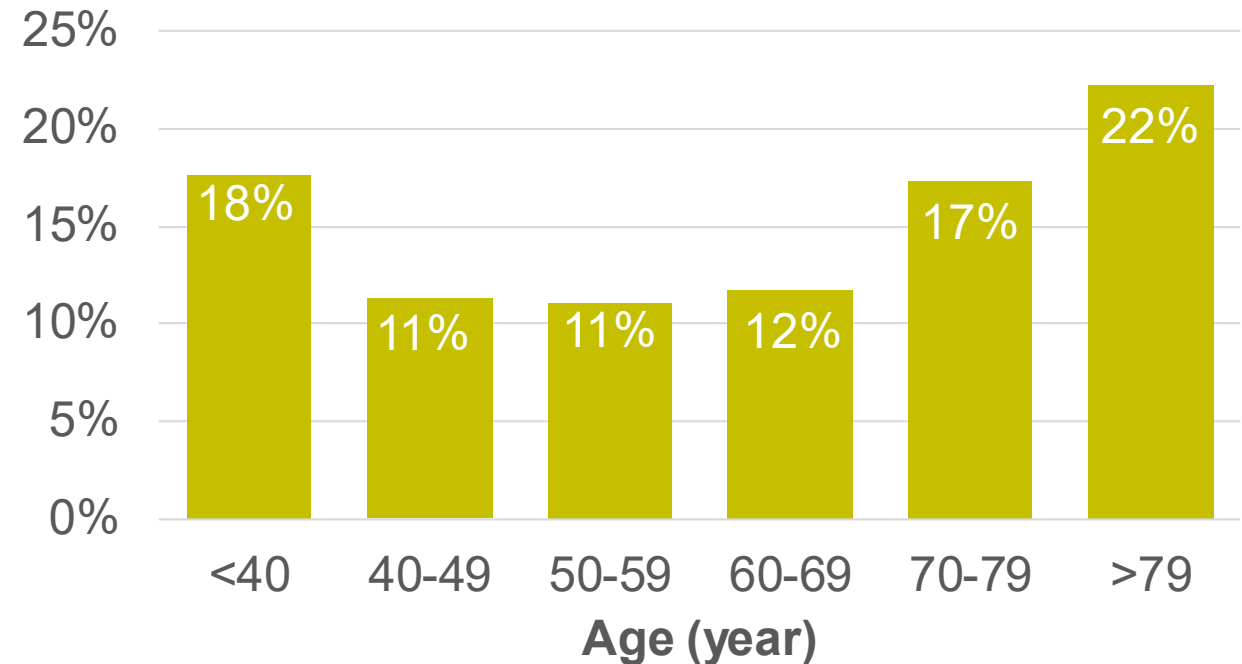


Breast cancer 2009-2014, stage I-III

excl: prior malignancy

Total n	Distant breast cancer recurrence		
	3-year	5-year	10-year
51.994	9%	12%	14%

10-year distant breast cancer recurrence



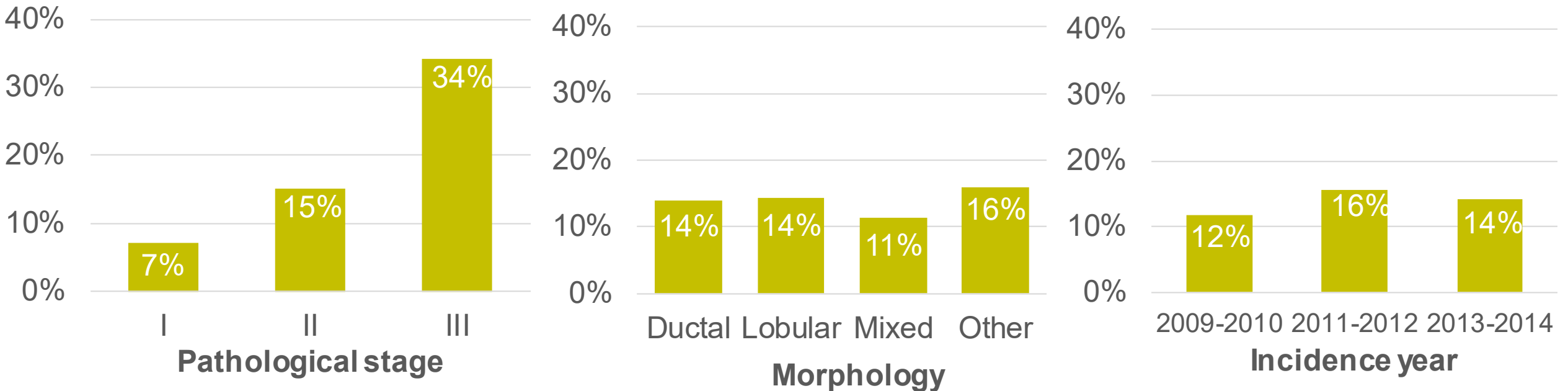


Breast cancer recurrence in Belgium



Breast cancer 2009-2014, stage I-III
 excl: prior malignancy

10-year distant breast cancer recurrence





Conclusions and perspectives

10-year distant breast cancer recurrence

- Influenced by age, stage, morphology
- BE: 13,9% vs. NL: 13,5% (van Maaren et al., 2019 Int J Cancer)

⇒ Extend to other cancer sites

⇒ International comparison

⇒ Systematic registration of recurrence

Acknowledgements

Belgian Cancer Registry



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