Case Completeness in Switzerland

Incidence period 2005 – 2010

Matthias Lorez
Coordination Centre
Foundation NICER
Zurich, Switzerland

www.nicer.org

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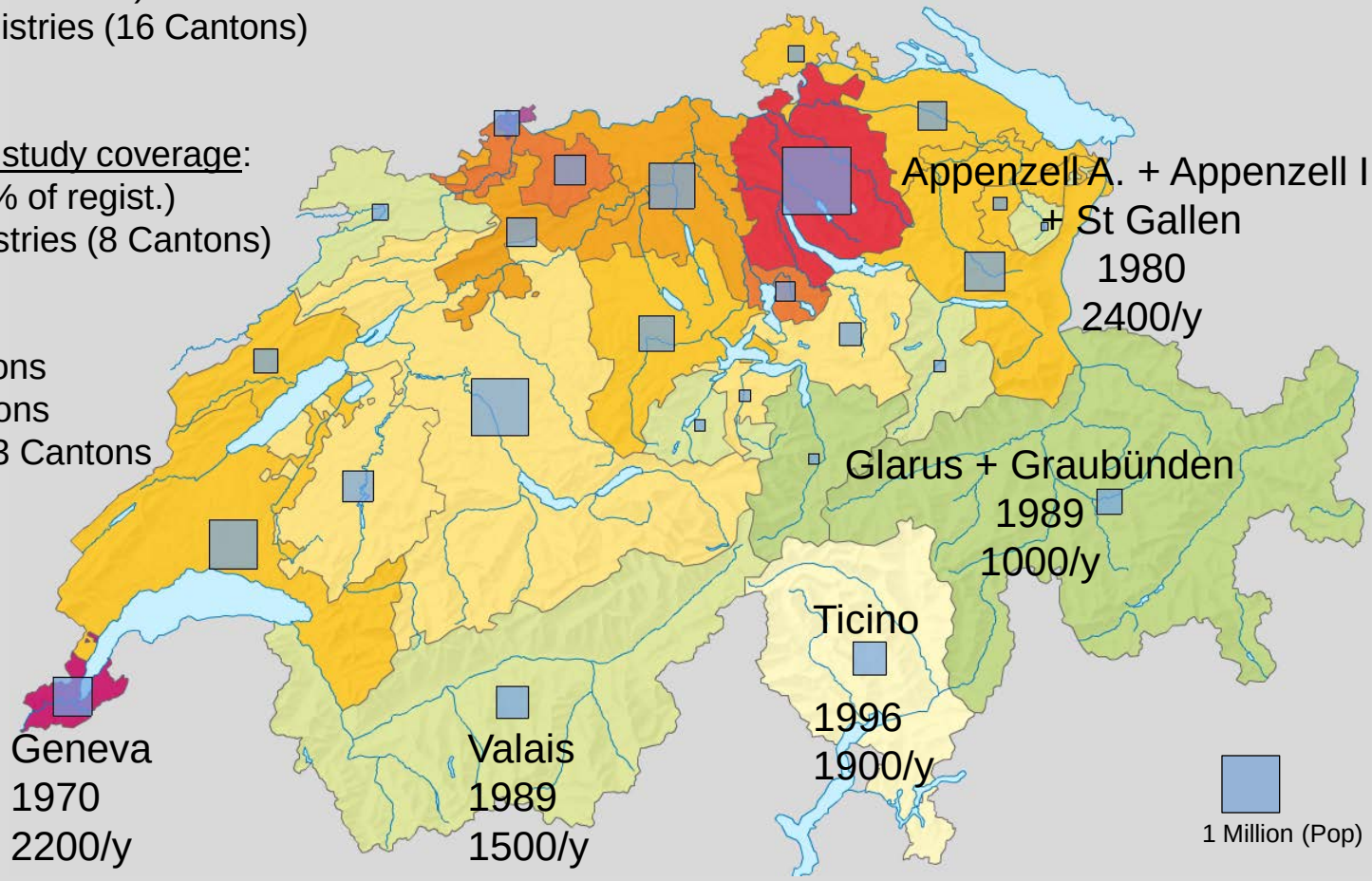
SWITZERLAND (CH)

8 Million Pop.
26 Cantons

Swiss registration coverage (2010):
5.3 Million (68% of total)
11 Cancer Registries (16 Cantons)

Completeness study coverage:
1.9 Million (36% of regist.)
5 Cancer Registries (8 Cantons)

Excluded:
>2005: 2 Cantons
No FU: 3 Cantons
No Reg.Date: 3 Cantons



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Registry	Cancer reportable by law ?	DCN / DCO [%]
A	No	2.5 / 1.2
B	No	1.5 / 0.4
C	No	2.5 / 0.6
D	No	2.7 / 0.3
E	No	2.3 / 0.2

Information abstracted from Questionaires submitted to CI-V vol. 9 and 10.

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Methods

ICD-10:

C00-14, C16, C18-21, C22, C25, C33-34, C43, C50, C53-55, C56, C61, C64, C67, C69-72, C82-86_96, C90, C91-95, C00-43_45-97

CL (C91.1_ C92.1)

Mortality/Incidence Ratio versus 1- Relative Survival[1]- Plot

- Semi-quantitative
- Age-standardized M- and I-Rates (2005-2010)
- RS: complete type and age-standardized (ICSS) (2005-2010)

Flow Method[2]

- Quantitative
- EUROCOURSE

WP3 Working group (Zanetti et al.)

References:
1. Parkin and Bray (2009). Evaluation of data quality in the cancer registry: Principles and methods Part II. Completeness. *Eur J Cancer* **45**, 756-764.
2. Bullard et al. (2000). Completeness of cancer registration: a new method for routine use. *Br J Cancer* **82**, 1111-1116.

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Mortality/Incidence Ratio versus 1-RS Plot

$$M/I\ ratio = \frac{\#\,deaths\,(specific\ disease)\ in\ T}{\#\,new\ cases\,(specific\ disease)\ in\ T}$$

Vital statistics

Cancer registry

- Mortality and incidence statistics valid (coding, completeness).
- Absence of trends in incidence, mortality.

$$Case\ fatality = \frac{\#\,deaths\,(specific\ disease)}{in\ specified\ patient\ group}$$

1 - RS

- Survival analysis valid (lead time bias, DCO, completeness)
- No excess hazard 5 years post-diagnosis.

$$5\ year\ (cumulative)\ RS = \frac{\%\ alive\ 5\ years\ after\ diagnosis\ (specific\ disease)}{\%\ expected\ alive\ with\ background\ mortality\ *}$$

* Cohort of general population matched by sex, age, calendar time, language region (yearly lifetables with annual prob. of death).

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Quality of Swiss Vital Statistics:

Percentage of cancer deaths assigned to ill-defined or less specific cancer codes.

Source: Registered single primary cases who died 2001-10 (100%)

Diagnosis	% Ill-defined «C» COD*	% other «C» COD	Total (N)
C00-14	1.5	5.8	753
C16	0.8	5.5	932
C18-21	0.9	3.4	2890
C22	1.0	1.6	1163
C25	0.7	2.5	1344
C33-34	1.5	1.0	4197
C43	1.4	2.2	494
C50	0.5	1.1	2473
C53-55	0.8	4.1	606
C56	1.8	2.5	598
C61	0.9	1.5	2332
C64	0.4	3.0	494
C67	1.4	6.4	849
C69-72	0.2	2.6	614
C82-86,96	0.8	6.4	801
C90	0.5	0.5	426
C91-95	0.3	3.0	672

*C76-80,97: ill-defined, secondary and unspecified; independent (primary) multiple sites

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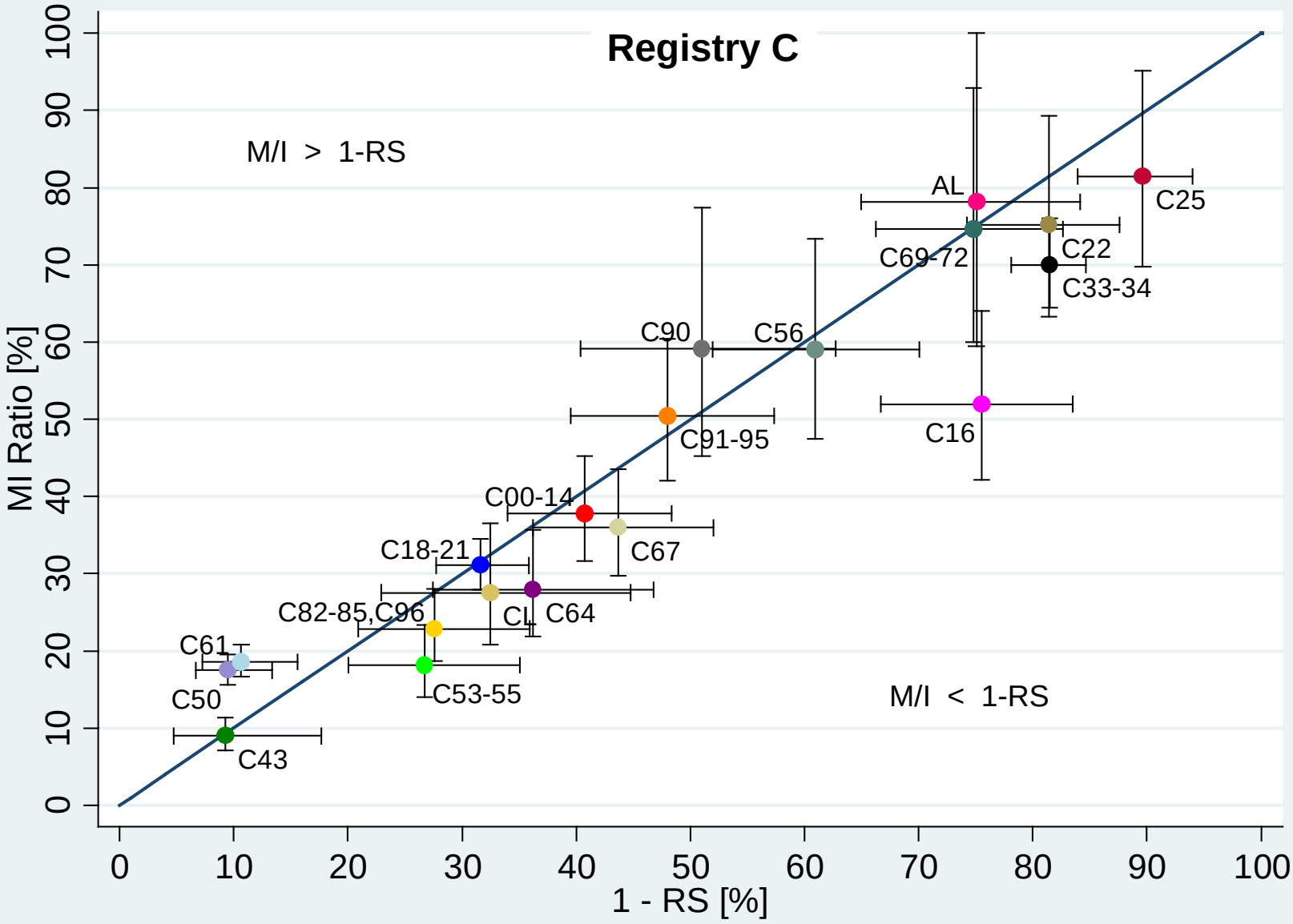
Mortality/Incidence Ratio versus 1- 5year Relative Survival Plot



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Flow method

(Bullard et al. 2000; Silcocks and Robinson 2007)

Two reasons for a patient to remain unregistered at t_i after diagnosis (t_0):

I. Patient is missing, but remains potentially registerable during life.
Patient is **still alive** at t_i but **not yet registered** :

$$M(t_i) = s(t_i) * u(t_i)$$

II. Patient became permanentely lost.
Patient has died in the interval t_{i-1} and t_i, has not been registered during life and lacked **mentioning of cancer in the DCs** :

$$L(t_i) = [s(t_i) - s(t_{i-1})] * u(t_i) * [1 - m(t_i)]$$

III. Case completeness after *n* intervals:

$$C(t_n) = 1 - M(t_n) - \sum_{i=1}^{n} L(t_i)$$

Assumptions:

- All DCs with cancer mentioned are sent to registry
- Registration after death occures only through DCs

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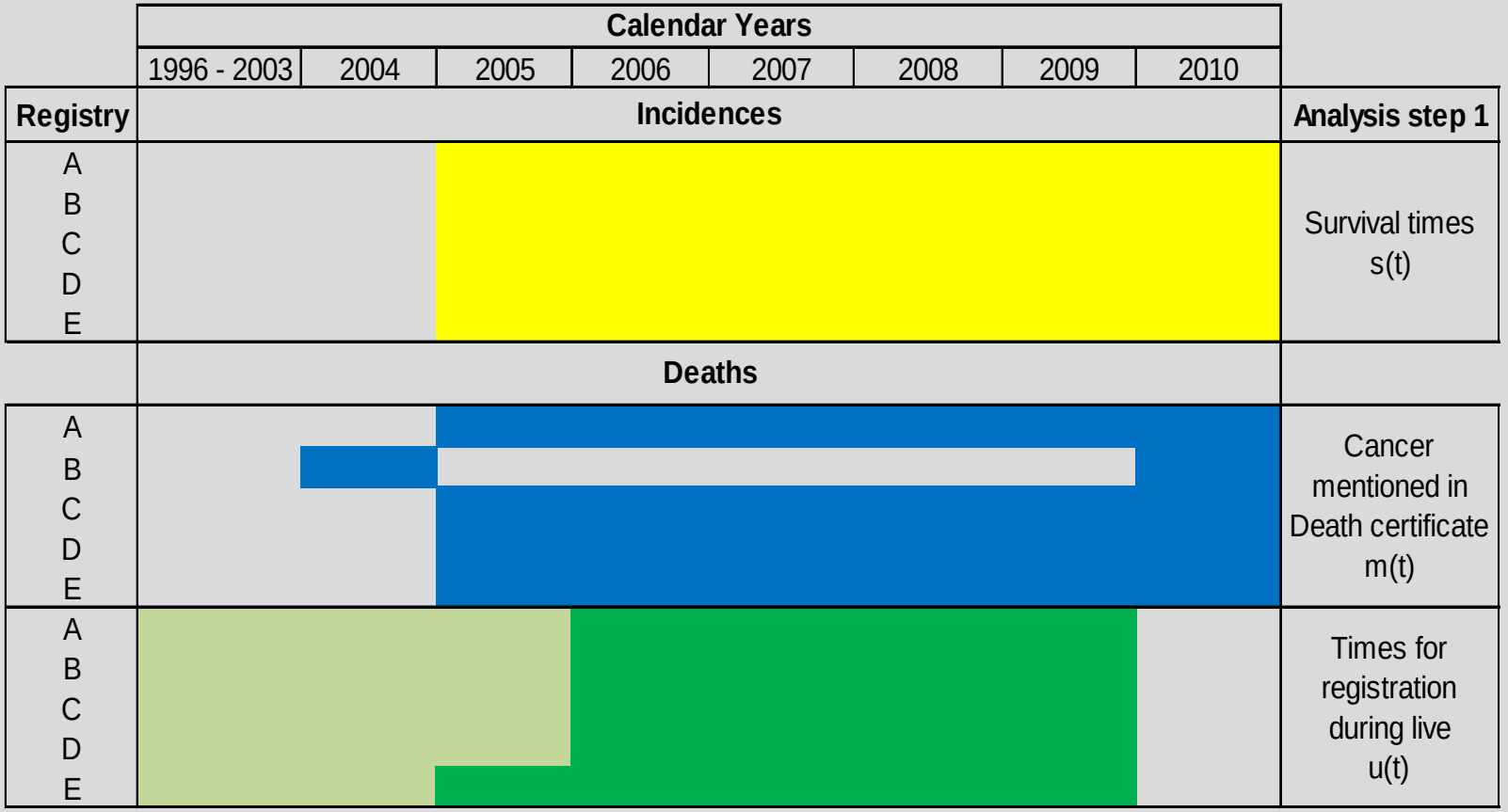
Data extracted for simple time-dependent Probabilities (Flow method)



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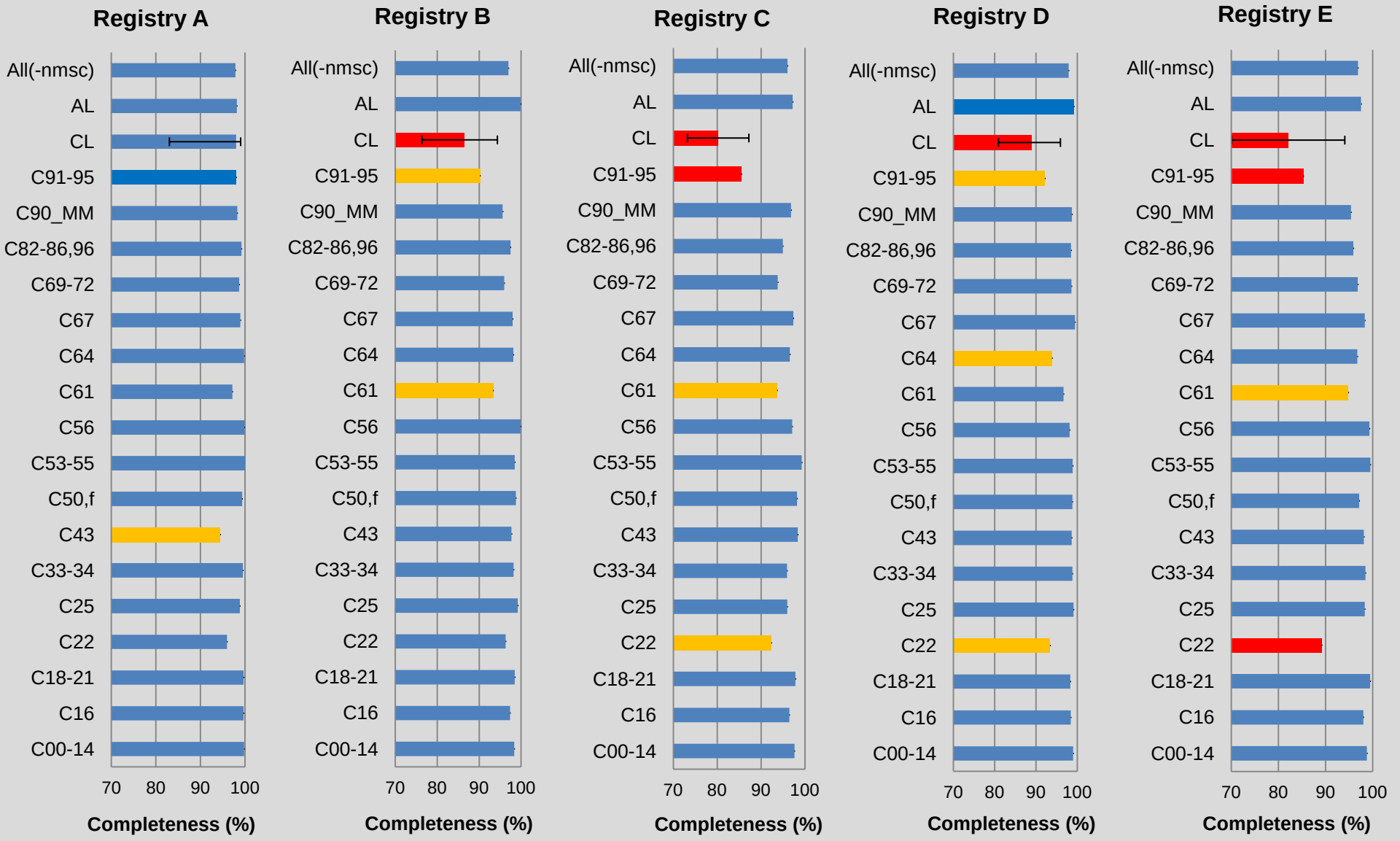
Case completeness 5 years after diagnosis (Flow method)



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Conclusions

	M/I vs 1-RS Plot	Flow method
Weekness	• Inconclusive findings (many assumptions) • Complex calculations (RS)	• Underemployed (very few publications)
Strength	• M/I and RS are routinely monitored	• Simple calculations (OS) • Accounts for registration dynamics

Swiss case completeness 5 years after diagnosis:

- High: most cancer sites
- Less than optimal : C22 and C61
- Under-registered: CLL / CML

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Thank you for your kind attention!

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Please send all suggestions and comments to: ML@nicer.org

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