

HERO

translation updated CCORE
utilisation trees
core countries →
translation to all countries
link with country guidelines

National Societies CCORE

questionnaire
focus on EBRT
equipment & personnel
all countries

National Societies

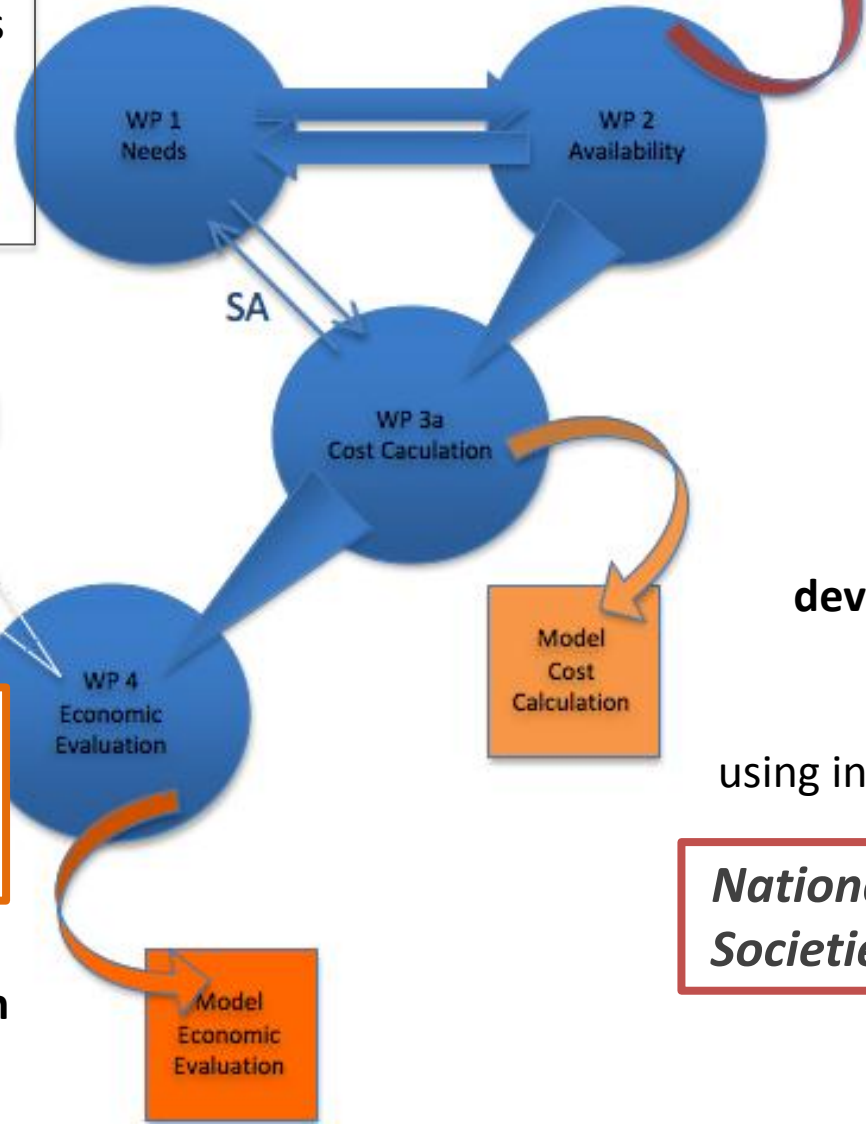
WP 3b
Effectiveness

National Societies ESTRO
Clinical Committee

develop methodology
for **economic evaluation
in radiotherapy**
at the national level

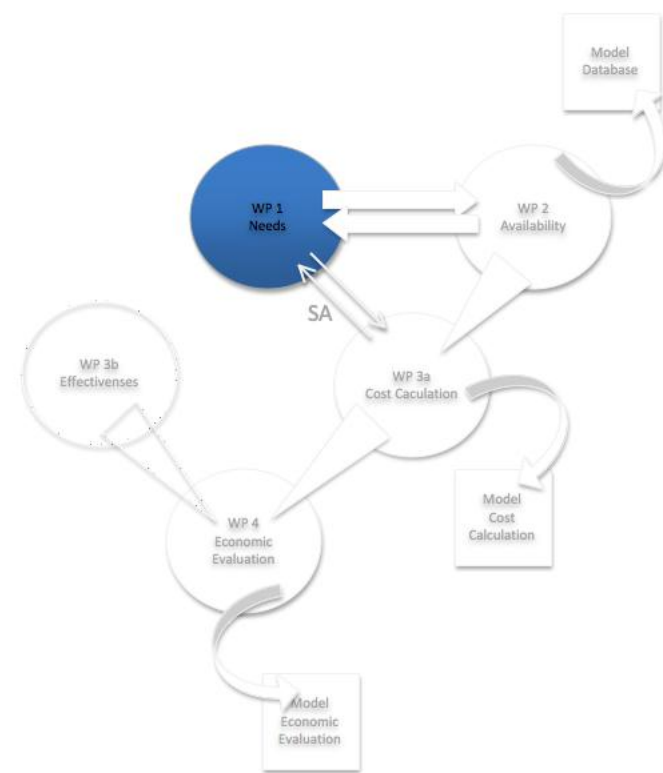
**develop Activity-Based
Costing model**
national level
using input availability & needs

National Societies CCORE IAEA



needs

translate CCORE utilisation trees
to European countries



Step 1: impact of cancer population mix:
insert country-based proportional **cancer incidence figures**

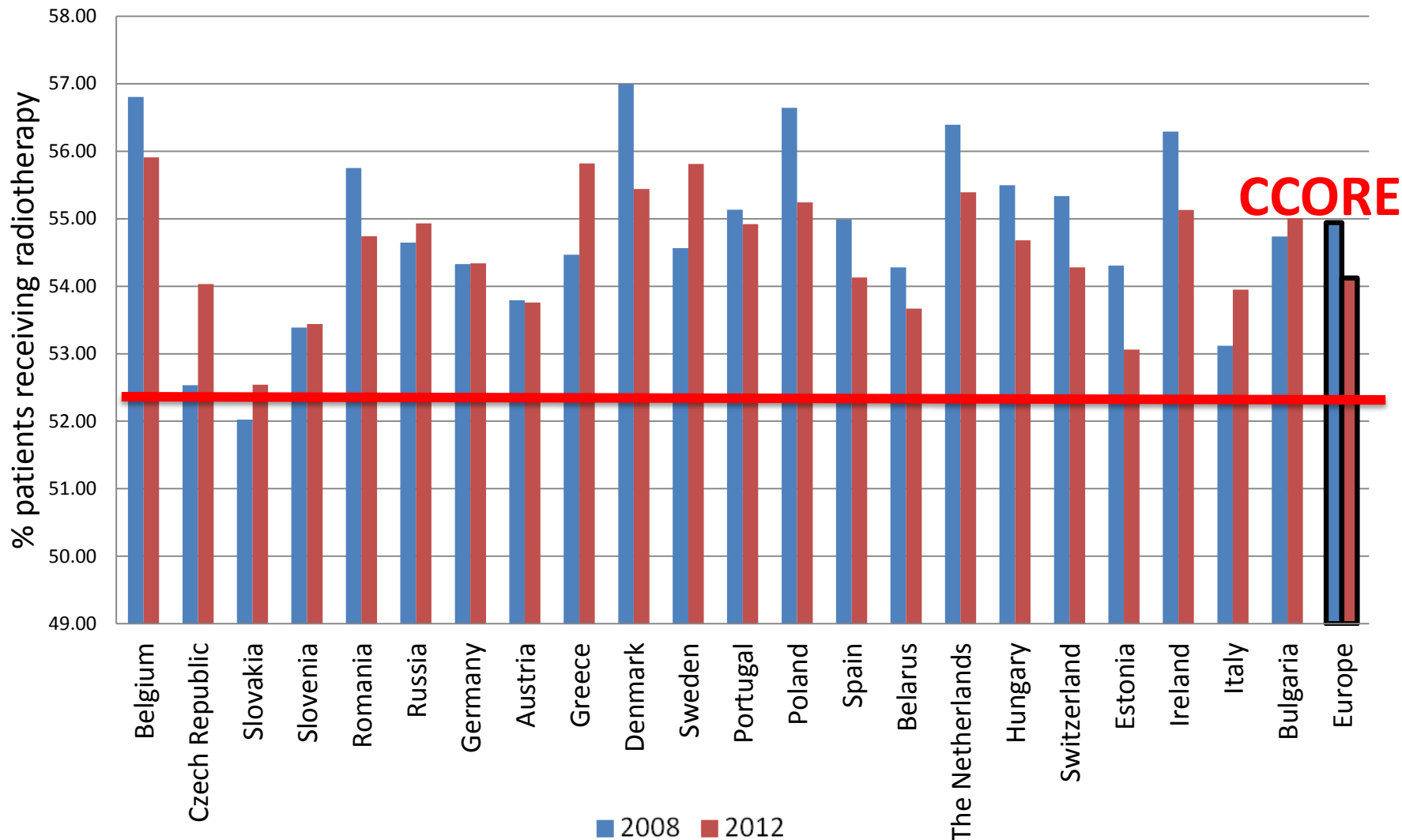
Step 2: impact of stage at diagnosis:
insert country-based **stage distributions** per cancer type

Step 3: further validation of the trees within different countries:
discuss acceptance of the decision trees?

Step 1: impact of cancer population mix

TABLE 3
Optimal Radiotherapy Utilization Rate by Cancer Type

Tumor type	Proportion of all cancers	Proportion of patients receiving radiotherapy	Patients receiving radiotherapy (% of all cancers)	Reference
Breast	0.13	83	10.8	Delaney et al. ¹²
Lung	0.10	76	7.6	Delaney et al. ¹³
Melanoma	0.11	23	2.5	Delaney et al. ¹⁴
Prostate	0.12	60	7.2	Delaney et al. ¹⁶
Gynecologic	0.05	35	1.8	Delaney et al. ^{18,19}
Colon	0.09	14	1.3	Delaney et al. ¹⁵
Rectum	0.05	61	3.1	Delaney et al. ¹⁵
Head and neck	0.04	78	3.1	Delaney et al. ¹⁷
Gall bladder	0.01	13	0.1	Delaney et al. ¹⁵
Liver	0.01	0	0.0	Delaney et al. ¹⁵
Esophageal	0.01	80	0.8	Delaney et al. ¹⁵
Stomach	0.02	68	1.4	Delaney et al. ¹⁵
Pancreas	0.02	57	1.1	Delaney et al. ¹⁵
Lymphoma	0.04	65	2.6	Featherstone et al. ²⁰
Leukemia	0.03	4	0.1	Featherstone et al. ²¹
Myeloma	0.01	38	0.4	Featherstone et al. ²¹
Central nervous system	0.02	92	1.8	Delaney et al. ²²
Renal	0.03	27	0.8	Delaney et al. ¹⁶
Bladder	0.03	58	1.7	Delaney et al. ¹⁶
Testis	0.01	49	0.5	Delaney et al. ¹⁶
Thyroid	0.01	10	0.1	Delaney et al. ²²
Unknown primary	0.04	61	2.4	Delaney et al. ²²
Other	0.02	50	1.0	See citations in text
Total	1.00	-	52.3	

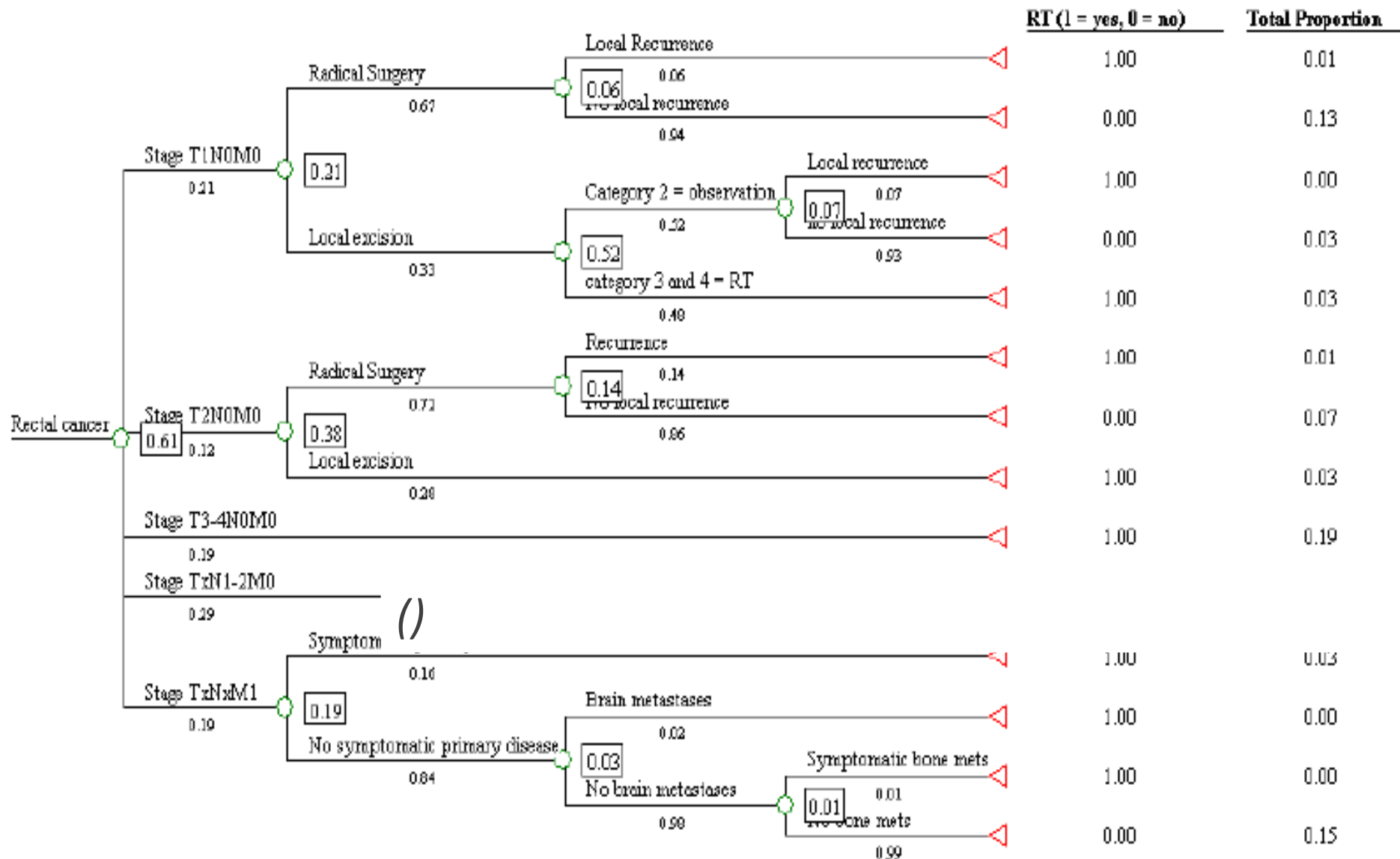


observed variability depending on the frequency of tumours
 by European country: **52% to 57%** vs. **52,3% to 55,9%**

Data: Globocan 2008 & European Cancer Observatory (ECO), IARC 2012

Courtesy J. Borrás

Step 2: impact of stage at diagnosis



Range per tumour site (*Belgium, Spain, the Netherlands*)

– Rectal cancer CCORE:	61%	↔ range: 52% to 67%
– Prostate cancer CCORE:	60%	↔ range: 56% to 64%
– Head and Neck CCORE:	78%	↔ range: 72% to 88%
– Lung Cancer CCORE:	76%	↔ range: 73% to 80%
– Breast cancer CCORE:	83%	↔ range: 81% to 83%

Most relevant differences:

earlier stages with only surgery, different incidence in head and neck

Practical problems:

incidence and stage of head & neck cancer subtypes

proportion rectal cancer in colo-rectal cancer

cancer registries

that can provide comprehensive data set

Detailed definition data input by stage/tumor type

SITE				STAGE		Type of staging
Bladder				Stage I		Pathological
				Stage II-III		Pathological
				Stage IV		Clinical
Brain	Gliomas	Astrocytoma		Glioblastoma multiforme		Not applicable
				Anaplastic astrocytoma		Not applicable
				low grade (II) astrocytoma		Not applicable
				pilocytic astrocytoma		Not applicable
				astrocytoma NOS and other astrocytomas		Not applicable
		Oligodendroglioma		oligodendroglioma		Not applicable
		Ependymoma		grade II ependymomas		Not applicable
				anaplastic grade III ependymomas		Not applicable
		Embryonal tumours		embryonal tumours		Not applicable
		Other neuro-epithelial		other neuro-epithelial		Not applicable
Breast				T1-2,N0-1		Pathological
				T3-4NxM0 or TxN2-3M0		Pathological
				Any T, Any N, M1		Clinical
Cervix				Stage IA	Stage IA1	Clinical
					Stage IA2	Clinical
				Stage IB-IIA		Clinical
				Stage IIB-IVA		Clinical
				Stage IVB		Clinical
Colon				TxNxM0	T1-3	Pathological
					T4	Pathological
				TxNxM1		Clinical
Gall Bladder				TxNxM0		Clinical
				TxNxM1		Clinical

Feasibility to deliver data cf. Excel file by CR Europe?
Willingness to participate?

[South of Netherlands (Eindhoven)
Poland (Silesia)
Belgium
+ actual uptake radiotherapy
+ recommendation radiotherapy (6m within diagnosis)

Translate Australian methodology to these complete data sets

- analyse global RTU per country/region, compare to CCORE
- subgroup/sensitivity analysis:
 - predictability of subsets (e.g. “Big 5”) for entire RTU
 - define methodology for European countries with partial data sets