

Supplemental Tables for:

Cervical cancer in Sub-Saharan Africa: a multinational population-based cohort study on patterns and guideline adherence of care

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Supplemental table 1: The evaluation scheme in the manuscript groups the assumed relative impact of procedures and regimens; not all definitions could be based on controlled trials.

Here we present background information on our considerations.

Treatment Modality	Authors	Year	Source	Stage	Comment	Effect	Consequence
<b>Surgery</b>							
Overview	Verleye et al	2009	□1	FIGO I- IIB	Different types of hysterectomies as of 2009, freely accessible review		Basis of the definition of deviations in primarily surgical patients
Radical surgery in locally advanced disease	Greer et al	2009	□2	FIGO IIB	Radical hysterectomy is not directly recommended but was under examination in 2009 together with NACT.		Considered minor deviation if combined with lymphadenectomy
Neoadjuvant chemotherapy (NACT)	Greer et al	2009	□2	FIGO IIB	NACT was under examination in 2009, thus not considered for evaluation.		Not considered
<b>Radiotherapy</b>							
Additional Brachytherapy (BT)	Greer et al Han et al	2009 2013	□3	FIGO IB- III	If there is intact primary tumour, BT is required and has a strong positive influence on survival.	HRR=0.66	Lack of BT considered major deviation
Concurrent chemotherapy (CT)	Vale et al	2008	□4	FIGO IB- III	Any curative radiotherapy should be combined with CT, but influence on survival is weaker than BT.	HRR=0.81	Lack of concurrent CT considered minor deviation
Dose of concurrent CT	Eifel et al	2006	□5	FIGO IB- III	To allow for different established protocols and adaption to patient status and toxicity		Minimum of 2 cycles considered as CT received
Minimum dose of BT for guideline adherence	Greer et al Viswanathan et al Einck et al	2009 2012 2014	2, 6, 7		Guideline recommendation regarding BT is imprecise. Retrospective calculation of bioequivalent dose impossible when documentation was incomplete. Therefore simplification: Any dose equivalent to or higher than established regimens accepted as adequate.		BT doses of $\geq 16.6$ Gy in addition to guideline-recommended 45 Gy external beam radiotherapy
Minimum dose for curative potential	Koh et al	2017	8	FIGO IB- III	Lowest dose recommendation to be found for external beam radiotherapy only is 40 Gy plus "boost".		45 Gy considered minimum curative dose and major deviation

## References of Supplemental table 1

1. Verleye L, Vergote I, Reed N, Ottevanger PB. Quality assurance for radical hysterectomy for cervical cancer: The view of the European Organization for Research and Treatment of Cancer--Gynecological Cancer Group (EORTC-GCG). *Ann Oncol* 2009; 20(10):1631–8.
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Supplemental table 2: Baseline mortality according to country from WHO life tables; nMx = age-specific death rate between ages x and x+n  
(<http://apps.who.int/gho/data/node.main.LIFECOUNTRY?lang=en> (accessed Apr 12, 2018))

Indicator	Age Group	Ivory Coast								Mean of age-specific death rate between ages x and x+n
		Benin 2013 Female	Ethiopia 2013 Female	Ivory Coast 2013 Female	Mali 2013 Female	Mozambique 2013 Female	Kenya 2013 Female	Uganda 2013 Female	Zimbabwe 2013 Female	
nMx	<1 year	0.067	0.04	0.065	0.075	0.059	0.035	0.038	0.045	0.0530
nMx	1-4 years	0.01	0.005	0.007	0.013	0.006	0.004	0.005	0.007	0.0071
nMx	5-9 years	0.003	0.002	0.008	0.004	0.004	0.002	0.003	0.002	0.0035
nMx	10-14 years	0.002	0.002	0.004	0.003	0.003	0.002	0.002	0.002	0.0025
nMx	15-19 years	0.002	0.002	0.005	0.003	0.003	0.002	0.002	0.002	0.0026
nMx	20-24 years	0.003	0.002	0.006	0.004	0.005	0.003	0.003	0.003	0.0036
nMx	25-29 years	0.004	0.003	0.007	0.004	0.008	0.003	0.005	0.005	0.0049
nMx	30-34 years	0.004	0.004	0.009	0.005	0.01	0.004	0.006	0.007	0.0061
nMx	35-39 years	0.005	0.005	0.012	0.006	0.013	0.005	0.008	0.013	0.0084
nMx	40-44 years	0.006	0.006	0.013	0.007	0.013	0.006	0.009	0.016	0.0095
nMx	45-49 years	0.007	0.007	0.014	0.008	0.012	0.006	0.011	0.016	0.0101
nMx	50-54 years	0.009	0.008	0.016	0.011	0.013	0.008	0.012	0.016	0.0116
nMx	55-59 years	0.012	0.011	0.02	0.014	0.016	0.011	0.014	0.016	0.0143
nMx	60-64 years	0.019	0.017	0.03	0.022	0.022	0.017	0.019	0.019	0.0206
nMx	65-69 years	0.03	0.027	0.046	0.036	0.033	0.027	0.029	0.028	0.0320
nMx	70-74 years	0.049	0.045	0.072	0.061	0.052	0.044	0.047	0.044	0.0518
nMx	75-79 years	0.079	0.073	0.111	0.102	0.083	0.072	0.076	0.071	0.0834
nMx	80-84 years	0.127	0.12	0.173	0.172	0.132	0.119	0.123	0.115	0.1351
nMx	85+ years	0.224	0.217	0.276	0.285	0.228	0.234	0.22	0.212	0.2370

Supplemental table 3: Therapy receipt and evaluation of degree of guideline adherence (see table 1) in the “Population-based Cohort” stratified by FIGO stage (n=632). Colors depict the degree of adherence: green=optimal, light green=minor and yellow=major deviation, orange=CDT without curative potential, and red=no CDT.

EBRT=External beam radiotherapy, CDT=Cancer-directed therapy, FU=Follow-up, time of observation since diagnosis

<b>Therapy reported in files (regardless of guideline adherence)</b>	<b>“Population-based Cohort” (n=632)</b>	<b>FIGO I (n=49)</b>	<b>FIGO II (n=91)</b>	<b>FIGO III (n=123)</b>	<b>FIGO IV (n=99)</b>	<b>FIGO unknown (n=48)</b>
Some form of surgery	82 (13%)	27 (55%)	22 (24%)	17 (14%)	10 (10%)	6 (13%)
Some form of EBRT after surgery	22 (3%)	2 (4%)	9 (10%)	5 (4%)	5 (5%)	1 (2%)
Some form of primary EBRT	73 (12%)	1 (2%)	27 (30%)	32 (26%)	10 (10%)	3 (6%)
Chemotherapy only	66 (10%)	0 (0%)	19 (21%)	23 (19%)	21 (21%)	3 (6%)
No CDT detected at any timepoint	189 (30%)	21 (43%)	23 (25%)	51 (41%)	58 (59%)	36 (75%)
Not traced	222 (35%)					
<b>Therapy evaluation (degree of guideline adherence according to table 1)</b>						
<b>Guideline-adherent</b>	<b>33 (5%)</b>	<b>21 (53%)</b>	<b>9 (12%)</b>	<b>3 (3%)</b>		
Minor deviation	12 (2%)	1 (3%)	12 (16%)	2 (2%)		
Major deviation	52 (8%)	6 (15%)	18 (24%)	28 (28%)		
CDT without curative potential	68 (11%)	0 (0%)	29 (39%)	39 (39%)		
No CDT detected, FU ≥ 3	48 (8%)	12 (30%)	7 (9%)	28 (28%)		
Evaluation not feasible	194 (31%)					
FIGO I-III: No CDT, FU < 3 months	47 (7%)					
FIGO unknown, any therapy or none	45 (7%)					
FIGO IV, any approach	99 (16%)					
Not traced	222 (35%)					

Supplemental table 4: Epidemiological, economical, and cancer care infrastructure indicators. Estimates are the most recent available in the respective international institutions' data tools.

BT=Brachytherapy; EBRT=External beam radiotherapy; GDP=Gross Domestic Product; USD=United States Dollar

Country	Annual cancer cases/inhabitants 2020[1]	Share of GDP spent on health care 2017[2]	GDP per capita as International USD 2019[3]	EBRT machines (MV/MeV therapy) 2019[4]	BT machines 2019[4]	Cancer Centers with radioteletherapy 2020[1]
Benin	5,100/11,176,000	2.49%	3,423.6	0	0	0
Ethiopia	60,960/104,957,000	3.30%	2,311.7	2	1	1
Ivory Coast	12,000/24,295,000	4.19%	5,455.4	2	0	1
Kenya	41,000/49,700,000	5.17%	4,509.3	12	5	6
Mali	9,350/18,542,000	3.88%	2,423.8	1	0	1
Mozambique	22,010/29,669,000	8.17%	1,333.5	1	0	1
Uganda	29,380/42,863,000	6.53%	2,271.6	1	1	1
Zimbabwe	15,520/16,530,000	4.73%	2,953.5	7	3	3
USA	1,604,000/324,459,000	16.89%	65,118.4	3536	776	2,153
Australia	122,000/24,451,000	9.28%	53,320.3	218	12	98

## REFERENCES

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3. <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD> Accessed December 06, 2020.
4. <https://dirac.iaea.org/Data/CountriesLight> Accessed December 06, 2020.