

The Roadmap of Colorectal Cancer Screening

Enea Ferlizza *, Rossella Solmi, Michela Sgarzi, Luigi Ricciardiello and Mattia Lauriola

Supplementary

Table S1. World and colorectal cancer in 2020. New cases, incidence and mortality rates estimation in continents. Obtained from Global Cancer Observatory (GBO) 2020, International Agency for Research on Cancer (<http://gco.iarc.fr/today>), World Health Organization.

Conti- nents	New Cases	Incidence Crude Rate ¹	Incidence ASR ¹	Number of death	Mortality Crude Rate ¹	Incidence ASR ¹	M/I ratio ² (%)
Africa	66,198	4.9	8.4	42,875	3.2	5.6	64.8
Asia	1,009,400	21.8	17.6	506,449	10.9	8.6	50.2
Europe	519,820	69.4	30.4	244,824	32.7	12.3	47.1
Latin America and the Caribbean	134,943	20.6	16.6	69,435	10.6	8.2	51.5
North America	180,575	49	26.2	63,987	17.3	8.2	35.4
Oceania	20,654	48.4	29.8	7,603	17.8	9.3	36.8

¹ Crude and age standardized incidence and mortality rates (ASR) per 100,000 inhabitants. ² M/I mortality to incidence ratio.

Table S2. World and colorectal cancer in 2020. New cases, incidence and mortality rates estimation in world areas. Obtained from Global Cancer Observatory (GBO) 2020, International Agency for Research on Cancer (<http://gco.iarc.fr/today>), World Health Organization.

World Areas	Continents	New Cases	Incidence Crude Rate ¹	Incidence ASR ¹	Deaths	Mortality Crude Rate ¹	Mortality ASR ¹	M/I ratio ² (%)
Eastern Africa	Africa	18,306	4.1	7.9	13,236	3	5.9	72.3
Middle Africa	Africa	5,767	3.2	6.8	4,228	2.4	5.2	73.3
Northern Africa	Africa	20,858	8.5	9.7	11,530	4.7	5.4	55.3
Southern Africa	Africa	7,684	11.4	13.7	3,943	5.8	7.2	51.3
Western Africa	Africa	13,583	3.4	6.7	9,938	2.5	5.1	73.2
Caribbean	America	11,454	26.3	18.2	6,983	16	10.4	61.0
Central America	America	19,535	10.9	10.4	10,439	5.8	5.5	53.4
Northern America	America	180,575	49	26.2	63,987	17.3	8.2	35.4
South America	America	103,954	24.1	18.5	52,013	12.1	8.9	50.0
Eastern Asia	Asia	757,849	45.2	25.9	368,072	21.9	11.8	48.6
South-Central Asia	Asia	102,987	5.1	5.5	59,206	2.9	3.2	57.5
South-Eastern Asia	Asia	106,995	16	14.8	57,064	8.5	7.9	53.3
Western Asia	Asia	41,569	14.9	16.8	22,107	7.9	8.9	53.2
Central and Eastern Europe	Europe	172,950	59	29.3	93,384	31.9	14.5	54.0
Northern Europe	Europe	81,638	76.8	33.6	33,768	31.8	11.4	41.4
Southern Europe	Europe	123,588	80.6	31.9	55,406	36.1	11.5	44.8
Western Europe	Europe	141,644	72.2	28.7	62,266	31.7	10.2	44.0
Australia and New Zealand	Oceania	19,644	64.8	33.2	7,038	23.2	9.5	35.8
Melanesia	Oceania	804	7.2	11.4	452	4.1	6.7	56.2
Micronesia	Oceania	93	16.9	16.6	53	9.7	9.5	57.0
Polynesia	Oceania	113	16.5	15.5	60	8.8	8.4	53.1

¹ Crude and age standardized incidence and mortality rates (ASR) per 100,000 inhabitants. ² M/I mortality to incidence ratio.

Table 3. Europe and colorectal cancer in 2020. New cases estimation, incidence and mortality rates in European countries for males and females. Obtained from Global Cancer Observatory (GBO) 2020, International Agency for Research on Cancer (<http://gco.iarc.fr/today>), World Health Organization.

ISO code	Country	New cases ¹			Incidence ²			Mortality ²		
		Total	Males	Females	Total	Males	Females	Total	Males	Females
ALB	Albania	1858	922	936	7.7	8.8	6.8	3.8	4.4	3.4
AUT	Austria	12006	6088	5918	21	26.5	16.4	8.7	11.6	6.3
BLR	Belarus	8821	4076	4745	30.2	39.4	24.8	14.1	19.7	10.9
BEL	Belgium	19897	8163	11734	35.3	43.6	28	10	12.6	7.8
BIH	Bosnia and Herzegovina	3538	1984	1554	27	34.6	20.8	14.5	19.6	10.5
BGR	Bulgaria	9044	4983	4061	27.4	36.6	20.3	14.7	20.7	10.3
HRV	Croatia	5372	2478	2894	36.3	50.8	24.9	19.6	28.2	13.5
CYP	Cyprus	1582	821	761	24.3	35.6	14.3	10.7	14	7.9
CZE	Czech Republic	16840	9117	7723	33.7	44.4	25.2	12.3	17	8.6
DNK	Denmark	9843	4760	5083	40.9	47.1	35.6	11.8	13.7	10.2
EST	Estonia	2063	1228	835	28.3	35.6	23.9	13.8	18.6	11.1
FIN	Finland	10938	5710	5228	25.7	29.4	22.8	8.8	10.9	7.2
FRA	France	124153	66070	58083	30.1	36.3	24.9	10.4	13.3	8.1
DEU	Germany	137656	67959	69697	25.8	30.4	21.8	9.9	12.9	7.3
GRC	Greece	14558	6786	7772	26.9	34.4	20.5	10.7	14.1	7.8
HUN	Hungary	13799	6234	7565	45.3	62	33.1	20.2	29	14
ISL	Iceland	446	220	226	28.5	32.8	24.3	9.5	10.9	8.1
IRL	Ireland	7936	4503	3433	34.9	42.6	27.9	12.4	15.7	9.4
ITA	Italy	94450	39317	55133	29.3	34.2	25.2	10.1	12.7	8.1
LVA	Latvia	2794	1531	1263	36.8	48.8	30.1	12.3	15.9	10.4
LTU	Lithuania	4006	2237	1769	27.6	36.4	22.3	11.7	16.1	9.4
LUX	Luxembourg	889	392	497	26.3	29.7	23.7	8.7	11.2	6.4
MKD	Macedonia	1880	892	988	26.1	26.6	26.1	13	13.9	12.3
MLT	Malta	739	336	403	25.7	31.1	21.2	10.1	11.9	8.6
MDA	Moldova Republic	2770	1278	1492	30	44.3	19.7	17.6	26.7	11.3
MNE	Montenegro	696	318	378	27.4	35.2	21.1	13.7	21.5	7.8
NLD	The Netherlands	30305	14580	15725	41	48.4	34.3	13.5	16.2	11.1
NOR	Norway	8899	5229	3670	41.9	45.4	38.7	13.5	15.1	12.1
POL	Poland	42921	18277	24644	30.5	41.7	21.9	16.1	22.8	11.3
PRT	Portugal	13800	6759	7041	39.4	55.2	26.6	13	18.6	8.8
ROU	Romania	21115	9030	12085	26.7	36.3	19.3	14.8	21.1	10.2
RUS	Russian Federation	126046	50994	75052	27.8	34.4	23.9	13.9	18.6	11.3
SRB	Serbia	12133	5409	6724	33.6	46.4	22.8	16.7	23.7	11.1
SVK	Slovakia	5931	2853	3078	43.9	60.7	31.1	21	29.6	14.8
SVN	Slovenia	3244	1834	1410	39.6	55.8	25.4	11.7	16.1	8.4
ESP	Spain	68701	34613	34088	35.8	47.7	25.4	11.5	15.5	8.2
SWE	Sweden	18483	10949	7534	27.8	30.5	25.2	10.8	12.1	9.7
CHE	Switzerland	14240	6948	7292	22.3	25.7	19.4	7.5	9.1	6.2
UKR	Ukraine	31180	12917	18263	25.5	33.6	20.5	12.9	18.1	9.9
GBR	United Kingdom	110669	56780	53889	34.1	40	29	11.4	13.5	9.6

¹ Estimated number of new cases in 2020. ² Age standardized incidence and mortality rates for 100,000 inhabitants (world).

Table 4. Italy and colorectal cancer. New cases estimation, incidence and mortality for regions of Italy from males and females.

	Regions	New cases ¹			Incidence ²		Mortality ³		
		Total	M	F	M	F	Total	M	F
NORTH	Emilia Romagna	3600	2000	1600	73.9	49.8	32.2	33.9	30.6
	Friuli Venezia Giulia	1500	900	600	126.6	70.9	38.2	42.4	34.2
	Liguria	1750	950	800	94.6	61.5	44.7	52.4	37.6
	Lombardia	7100	4100	3000	67	43.3	30.0	33.3	26.9
	Piemonte	4000	2200	1800	82.9	61.5	38.0	41.8	34.4
	Trentino Alto Adige	900	500	400	82.8	55.2	24.7	27.0	22.5
	Valle d'Aosta	<100	< 50	< 50	64.5	46.7	33.4	26.0	40.4
	Veneto	3900	2100	1800	78.1	53.9	31.5	34.1	29.1
CENTER	Lazio	5200	2700	2500	88.5	65.8	32.3	36.2	28.7
	Marche	1150	650	500	87.2	63.5	33.8	39.1	28.7
	Toscana	3600	2000	1600	86.7	61.4	33.2	36.5	30.2
	Umbria	850	450	400	82.5	57.1	34.4	41.4	27.9
SOUTH	Abruzzo	1100	600	500	83.9	55.9	33.3	40.9	26.0
	Basilicata	450	250	200	80	47.7	30.3	33.5	27.2
	Calabria	1400	800	600	79.2	48.5	31.4	37.6	25.4
	Campania	3800	2200	1600	82.8	50.9	26.8	30.9	22.9
	Molise	250	150	100	83.9	55.9	34.2	41.0	27.6
	Puglia	2900	1800	1100	81	45.8	28.4	32.6	24.4
	Sardegna	1500	1000	500	113	36.6	36.0	42.6	29.5
	Sicilia	3950	2100	1850	84.6	59.5	32.7	36.4	29.1
	Italy	48900	27450	21450	85.2	54.6	32.0	35.9	28.4

¹ Estimated number of new cases for the year 2019; ² Crude incidence rates estimation for 100,000 inhabitants for the year 2019; ³ Crude mortality rates for 100,000 inhabitants for the year 2018 (Italian National Institute of Statistics, ISTAT).

Table 5. CRC screening in Italy. Invitation rates of the target population and participation rates of the invited people in north center and south of Italy.

	Invitation Rate (%)	Participation Rate (%)
North	90	60
Centre	96	45
South-Isles	44	23
Italy	75	42

Table 6. CRC screening in Italy. Population, percentage of people older than 65 years and participation to FIT screening of the invited target population for each region of Italy.

	Regions	Inhabitants	> 65 years (%)	Participation (%)
NORTH	Piemonte	4,375,865	25.3	nd
	Val D'Aosta	126,202	23.5	63.6
	Liguria	1,067,648	28.4	40.2
	Lombardia	10,036,258	22.4	66.7
	Trentino Alto Adige	1,215,538	20.6	57.5
	Veneto	4,905,037	22.6	65.9
	Friuli Venezia Giulia	1,556,981	25.9	65.2
	Emilia Romagna	4,452,629	23.8	64.0
CENTER	Toscana	3,736,968	25.2	58.9
	Umbria	884,640	25.2	53.0
	Marche	1,531,753	24.5	47.0
	Lazio	5,896,693	21.4	21.6
SOUTH	Abruzzo	1,315,196	23.6	20.3
	Molise	308,493	24.2	43.3
	Campania	5,826,860	18.5	13.3
	Puglia	4,048,242	21.7	4.6
	Basilicata	567,118	22.6	35.5
	Calabria	1,956,687	21.2	5.6
	Sicilia	5,026,989	20.8	22.9
Sardegna	1,648,176	23.2	34.6	
ITALY	Total	60,483,973	23.2	42.2