

Supplementary Table 1. Depression incidence by year and age according to stoma status

Time group (yr)	Age group (yr)	No stoma						Temporary stoma						Permanent stoma					
		Person-time	Failures	Rate (/1,000 person-yr)	95% Confidence interval	Person-time	Failures	rate	95% Confidence interval	IRR	95% Confidence interval	Person-time	Failures	Rate (/1,000 person-yr)	95% CI	IRR	95% Confidence interval		
1	Total	32,426	1,508	46.51	44.22-48.91	18,072	857	47.42	44.35-50.70	1.02	0.94-1.11	5,206	305	58.58	52.37-65.54	1.26	1.11-1.43		
	20.00	66	6	90.91	40.84-202.37	42	4	95.04	35.67-253.22	1.05	0.22-4.41	10	1	98.50	13.88-699.28	1.08	0.02-8.93		
	30.00	639	18	28.17	17.75-44.71	394	13	32.98	19.15-56.81	1.17	0.53-2.53	111	4	35.88	13.47-95.61	1.27	0.31-3.87		
	40.00	3,086	111	35.97	29.86-43.32	1,873	77	41.12	32.89-51.41	1.14	0.84-1.54	480	26	54.14	36.86-79.52	1.51	0.94-2.32		
	50.00	8,177	355	43.41	39.13-48.17	4,701	194	41.27	35.85-47.51	0.95	0.79-1.14	1,139	72	63.19	50.16-79.61	1.46	1.11-1.88		
	60.00	10,215	465	45.52	41.57-49.85	5,681	223	39.25	34.42-44.76	0.86	0.73-1.01	1,522	71	46.66	36.97-58.88	1.02	0.79-1.32		
	70.00	8,265	459	55.53	50.68-60.85	4,425	276	62.37	55.43-70.18	1.12	0.96-1.31	1,470	98	66.65	54.67-81.24	1.20	0.95-1.50		
	80.00	1,978	94	47.53	38.83-58.17	957	70	73.16	57.88-92.48	1.54	1.11-2.12	473	33	69.81	49.63-98.20	1.47	0.96-2.21		
	Total	29,826	940	31.52	29.56-33.60	16,381	482	29.42	26.91-32.17	0.93	0.83-1.04	4,470	157	35.13	30.04-41.07	1.11	0.94-1.32		
	20.00	62	3	48.76	15.73-151.19	37	0	0.00	-	0.00	0.00-3.98	8	0	0.00	-	0.00	0.00-18.61		
30.00	599	18	30.04	18.92-47.67	364	7	19.23	9.17-40.34	0.64	0.23-1.61	101	2	19.78	4.95-79.10	0.66	0.07-2.75			
40.00	2,910	49	16.84	12.73-22.28	1,750	35	20.00	14.36-27.85	1.19	0.75-1.87	435	11	25.31	14.02-45.71	1.50	0.70-2.93			
50.00	7,695	193	25.08	21.78-28.88	4,355	119	27.33	22.83-32.70	1.09	0.86-1.38	1,007	36	35.75	25.79-49.57	1.43	0.97-2.04			
60.00	9,483	292	30.79	27.45-34.53	5,228	149	28.50	24.27-33.46	0.93	0.75-1.13	1,332	46	34.54	25.87-46.11	1.12	0.80-1.53			
70.00	7,405	315	42.54	38.09-47.51	3,880	134	34.54	29.16-40.91	0.81	0.66-1.00	1,229	41	33.36	24.56-45.30	0.78	0.55-1.09			
80.00	1,671	70	41.88	33.13-52.94	767	38	49.52	36.04-68.06	1.18	0.77-1.78	358	21	58.62	38.22-89.91	1.40	0.82-2.31			
Total	26,165	674	25.76	23.89-27.78	13,920	376	27.01	24.41-29.88	1.05	0.92-1.19	3,748	114	30.41	25.31-36.54	1.18	0.96-1.44			
20.00	55	0	0.00	-	32	1	31.56	4.45-224.06	-	0.04-2.29	7	0	0.00	-	-	-			
30.00	531	10	18.84	10.14-35.01	322	4	12.44	4.67-33.15	0.66	0.15-2.29	86	1	11.69	1.65-82.96	0.62	0.01-4.36			
40.00	2,616	55	21.03	16.14-27.39	1,528	40	26.19	19.21-35.70	1.25	0.81-1.91	379	11	29.05	16.09-52.45	1.38	0.65-2.67			
50.00	6,917	111	16.05	13.32-19.33	3,778	74	19.59	15.60-24.60	1.22	0.90-1.65	858	23	26.80	17.81-40.33	1.67	1.02-2.63			
60.00	8,429	202	23.97	20.88-27.51	4,513	115	25.48	21.23-30.60	1.06	0.84-1.34	1,139	32	28.10	19.87-39.74	1.17	0.78-1.71			
70.00	6,330	237	37.44	32.97-42.52	3,184	120	37.69	31.52-45.08	1.01	0.80-1.26	1,008	36	35.72	25.76-49.52	0.95	0.65-1.36			
80.00	1,287	59	45.83	35.51-59.16	566	22	38.90	25.61-59.08	0.85	0.50-1.41	272	11	40.46	22.40-73.05	0.88	0.42-1.70			
Total	22,654	639	28.21	26.10-30.48	11,479	269	23.43	20.79-26.41	0.83	0.72-0.96	3,100	79	25.48	20.44-31.77	0.90	0.71-1.14			
20.00	51	0	0.00	-	25	2	80.84	20.22-323.22	-	0.39-2.49	5	0	0.00	-	-	-			
30.00	472	7	14.82	7.07-31.09	284	2	7.03	1.76-28.12	0.47	0.05-2.49	73	4	54.79	20.56-145.98	3.70	0.79-14.54			
40.00	2,334	46	19.71	14.76-26.31	1,298	21	16.17	10.55-24.81	0.82	0.47-1.40	337	5	14.82	6.17-35.61	0.75	0.23-1.89			
50.00	6,172	133	21.55	18.18-25.54	3,161	59	18.66	14.46-24.09	0.87	0.63-1.19	727	20	27.52	17.76-42.66	1.28	0.76-2.05			
60.00	7,335	220	29.99	26.28-34.23	3,764	92	24.44	19.92-29.98	0.81	0.63-1.04	962	23	23.90	15.88-35.96	0.80	0.49-1.23			
70.00	5,314	197	37.07	32.24-42.63	2,536	83	32.73	26.40-40.59	0.88	0.67-1.15	798	21	26.31	17.16-40.36	0.71	0.43-1.12			
80.00	975	36	36.92	26.63-51.19	411	10	24.33	13.09-45.22	0.66	0.29-1.36	197	6	30.42	13.66-67.70	0.82	0.28-1.97			

Supplementary Table 1. Continued 1

Time group (yr)	Age group	No stoma					Temporary stoma					Permanent stoma								
		Person-time	Failures	Rate (/1,000 person-yr)	95% Confidence interval	IRR	Person-time	Failures	Rate (/1,000 person-yr)	95% Confidence interval	IRR	Person-time	Failures	Rate (/1,000 person-yr)	95% Confidence interval	IRR				
5	Total	19,637	535	27.24	25.03	29.65	9,510	203	21.35	18.60	24.49	0.78	2,623	66	25.16	19.77	32.03	0.92	0.70	1.19
	20.00	47	0	0.00	-	-	21	0	0.00	-	-	-	4	0	0.00	-	-	-	-	-
	30.00	428	4	9.35	3.51	24.90	249	4	16.04	6.02	42.74	1.72	65	0	0.00	-	0.00	0.00	10.00	-
	40.00	2,091	33	15.78	11.22	22.20	1,127	18	15.98	10.07	25.36	1.01	295	8	27.13	13.57	54.24	1.72	0.69	3.79
	50.00	5,491	97	17.67	14.48	21.56	2,651	37	13.96	10.11	19.26	0.79	633	13	20.53	11.92	35.35	1.16	0.60	2.08
	60.00	6,417	170	26.49	22.80	30.79	3,158	70	22.17	17.54	28.02	0.84	835	22	26.35	17.35	40.02	0.99	0.61	1.56
	70.00	4,429	192	43.35	37.63	49.93	2,012	64	31.81	24.90	40.65	0.73	649	20	30.83	19.89	47.78	0.71	0.42	1.13
	80.00	734	39	53.11	38.81	72.69	292	10	34.25	18.43	63.66	0.64	142	3	21.09	6.80	65.41	0.40	0.08	1.25
	Total	16,903	447	26.44	24.10	29.01	7,854	176	22.41	19.33	25.98	0.85	2,246	49	21.82	16.49	28.87	0.82	0.60	1.11
	20.00	40	0	0.00	-	-	20	0	0.00	-	-	-	-	4	0	0.00	-	-	-	-
6	Total	379	4	10.56	3.96	28.14	221	4	18.08	6.78	48.16	1.71	59	1	16.91	2.38	120.08	1.60	0.03	16.18
	20.00	1,852	23	12.42	8.25	18.69	977	11	11.26	6.23	20.33	0.91	262	4	15.28	5.73	40.71	1.23	0.31	3.60
	30.00	4,814	111	23.06	19.14	27.77	2,210	33	14.94	10.62	21.01	0.65	558	11	19.73	10.92	35.62	0.86	0.42	1.59
	40.00	5,598	143	25.54	21.68	30.09	2,644	63	23.83	18.61	30.50	0.93	731	13	17.79	10.33	30.64	0.70	0.36	1.23
	50.00	3,672	144	39.22	33.31	46.17	1,582	55	34.77	26.70	45.29	0.89	530	17	32.08	19.94	51.61	0.82	0.46	1.36
	60.00	548	22	40.18	26.46	61.02	201	10	49.77	26.78	92.50	1.24	103	3	29.18	9.41	90.49	0.73	0.14	2.42
	Total	14,357	358	24.93	22.48	27.66	6,351	129	20.31	17.09	24.14	0.81	1,928	45	23.35	17.43	31.27	0.94	0.67	1.28
	20.00	39	0	0.00	-	-	16	0	0.00	-	-	-	-	3	0	0.00	-	-	-	-
	30.00	339	3	8.86	2.86	27.47	188	2	10.65	2.66	42.57	1.20	53	3	56.57	18.24	175.39	6.38	0.86	47.67
	40.00	1,643	16	9.74	5.97	15.90	820	9	10.97	5.71	21.08	1.13	241	5	20.75	8.64	49.86	2.13	0.61	6.09
50.00	4,162	75	18.02	14.37	22.60	1,800	37	20.56	14.90	28.38	1.14	491	7	14.25	6.79	29.88	0.79	0.31	1.71	
60.00	4,792	128	26.71	22.46	31.76	2,190	45	20.55	15.34	27.52	0.77	634	13	20.49	11.90	35.29	0.77	0.40	1.36	
70.00	2,982	119	39.90	33.34	47.75	1,206	28	23.22	16.04	33.64	0.58	433	14	32.32	19.14	54.57	0.81	0.43	1.41	
80.00	401	17	42.41	26.36	68.22	132	8	60.48	30.25	120.93	1.43	71	3	42.12	13.58	130.60	0.99	0.19	3.43	
Total	11,920	295	24.75	22.08	27.74	4,968	115	23.15	19.28	27.79	0.94	1,633	33	20.21	14.37	28.43	0.82	0.55	1.17	
20.00	37	0	0.00	-	-	12	0	0.00	-	-	-	-	3	1	345.31	48.64	2451.37	-	0.33	-
30.00	301	4	13.27	4.98	35.35	158	0	0.00	-	-	0.00	46	1	21.92	3.09	155.60	1.65	0.03	16.69	
40.00	1,443	16	11.09	6.79	18.10	676	12	17.74	10.07	31.24	1.60	218	2	9.19	2.30	36.76	0.83	0.09	3.53	
50.00	3,506	59	16.83	13.04	21.72	1,422	25	17.58	11.88	26.02	1.04	434	2	4.61	1.15	18.43	0.27	0.03	1.03	
60.00	4,001	107	26.74	22.13	32.32	1,731	46	26.57	19.90	35.48	0.99	540	18	33.33	21.00	52.89	1.25	0.71	2.07	
70.00	2,351	95	40.41	33.05	49.41	888	31	34.90	24.54	49.62	0.86	342	9	26.30	13.69	50.55	0.65	0.29	1.29	
80.00	281	14	49.79	29.49	84.07	80	1	12.45	1.75	88.39	0.25	50	0	0.00	-	-	0.00	0.00	1.68	

Supplementary Table 1. Continued 2

Time group (yr)	Age group (yr)	No stoma					Temporary stoma					Permanent stoma								
		Person-time	Failures	Rate (/1,000 person-yr)	95% Confidence interval	Person-time	Failures	rate	95% Confidence interval	IRR	95% Confidence interval	Person-time	Failures	Rate (/1,000 person-yr)	95% CI	IRR	95% Confidence interval			
9	Total	9,631	211	21.91	19.14	25.07	3,779	65	17.20	13.49	21.93	0.78	1,365	28	20.51	14.16	29.70	0.94	0.61	1.39
	20.00	34	0	0.00	-	-	9	0	0.00	-	-	-	2	0	0.00	-	-	-	-	-
	30.00	265	3	11.34	3.66	35.15	130	1	7.67	1.08	54.48	0.68	40	2	50.19	12.55	200.70	4.43	0.37	38.65
	40.00	1,230	12	9.75	5.54	17.17	544	9	16.56	8.61	31.82	1.70	188	4	21.26	7.98	56.64	2.18	0.51	7.19
	50.00	2,857	51	17.85	13.57	23.49	1,098	5	4.55	1.89	10.94	0.26	371	6	16.19	7.27	36.04	0.91	0.32	2.11
	60.00	3,268	85	26.01	21.03	32.17	1,322	32	24.21	17.12	34.23	0.93	460	11	23.90	13.23	43.15	0.92	0.44	1.73
	70.00	1,784	54	30.26	23.18	39.51	627	18	28.70	18.08	45.55	0.95	272	4	14.71	5.52	39.19	0.49	0.13	1.32
	80.00	192	6	31.32	14.07	69.71	49	0	0.00	-	-	0.00	32	1	30.85	4.35	219.01	0.99	0.02	8.12
	Total	7,661	185	24.15	20.91	27.89	2,792	55	19.70	15.13	25.66	0.82	1,110	20	18.02	11.62	27.93	0.75	0.45	1.19
	20.00	29	0	0.00	-	-	6	0	0.00	-	-	-	2	0	0.00	-	-	-	-	-
10	Total	226	3	13.28	4.28	41.19	105	2	19.06	4.77	76.20	1.43	32	2	62.75	15.69	250.90	4.72	0.39	41.24
	20.00	1,037	12	11.57	6.57	20.38	426	5	11.73	4.88	28.19	1.01	157	0	0.00	-	-	0.00	0.00	2.38
	30.00	2,258	61	27.01	21.02	34.71	801	12	14.99	8.51	26.39	0.55	311	3	9.64	3.11	29.89	0.36	0.07	1.09
	40.00	2,617	63	24.08	18.81	30.82	986	23	23.34	15.51	35.12	0.97	376	9	23.91	12.44	45.96	0.99	0.43	2.01
	50.00	1,372	40	29.16	21.39	39.75	438	11	25.11	13.91	45.34	0.86	212	5	23.63	9.84	56.78	0.81	0.25	2.05
	60.00	123	6	48.95	21.99	108.95	30	2	65.70	16.43	262.71	1.34	20	1	50.05	7.05	355.33	1.02	0.02	8.43
	Total	5,802	158	27.23	23.30	31.83	1,856	49	26.40	19.95	34.93	0.97	869	20	23.01	14.84	35.66	0.84	0.50	1.35
	20.00	22	0	0.00	-	-	4	0	0.00	-	-	-	2	0	0.00	-	-	-	-	-
	30.00	184	2	10.89	2.72	43.55	76	3	39.25	12.66	121.70	3.60	28	0	0.00	-	-	0.00	0.00	34.42
	40.00	831	7	8.42	4.02	17.67	309	2	6.48	1.62	25.90	0.77	127	5	39.24	16.33	94.28	4.66	1.17	17.05
11	Total	1,717	41	23.88	17.58	32.43	534	13	24.36	14.14	41.95	1.02	245	4	16.35	6.14	43.56	0.68	0.18	1.89
	20.00	1,985	57	28.72	22.15	37.24	647	18	27.81	17.52	44.14	0.97	296	8	27.00	13.50	53.98	0.94	0.39	1.98
	30.00	988	46	46.56	34.88	62.16	266	13	48.85	28.37	84.13	1.05	155	3	19.31	6.23	59.86	0.41	0.08	1.29
	40.00	76	5	65.87	27.42	158.26	20	0	0.00	-	-	0.00	15	0	0.00	-	-	0.00	0.00	5.51
	Total	4,196	99	23.59	19.38	28.73	1,205	29	24.07	16.72	34.63	1.02	671	18	26.82	16.90	42.57	1.14	0.65	1.89
	20.00	15	0	0.00	-	-	3	0	0.00	-	-	-	2	0	0.00	-	-	-	-	-
	30.00	145	1	6.91	0.97	49.07	51	1	19.71	2.78	139.90	2.85	23	0	0.00	-	-	0.00	0.00	250.00
	40.00	623	11	17.67	9.78	31.90	220	0	0.00	-	-	0.00	100	2	20.07	5.02	80.26	1.14	0.12	5.21
	50.00	1,263	24	19.00	12.74	28.35	342	6	17.56	7.89	39.08	0.92	198	1	5.05	0.71	35.86	0.27	0.01	1.63
	60.00	1,430	39	27.27	19.93	37.33	416	16	38.49	23.58	62.82	1.41	231	10	43.33	23.31	80.52	1.59	0.71	3.24
70.00	672	23	34.23	22.74	51.50	162	5	30.91	12.87	74.27	0.90	110	4	36.21	13.59	96.49	1.06	0.27	3.10	
80.00	48	1	20.68	2.91	146.79	12	1	86.27	12.15	612.44	4.17	8	1	131.44	18.52	933.13	6.36	0.08	499.00	

Supplementary Table 1. Continued 3

Time group (yr)	Age group	No stoma				Temporary stoma				Permanent stoma												
		Person-time	Failures	Rate (/1,000 person-yr)	95% Confidence interval	Person-time	Failures	rate	95% Confidence interval	IRR	95% Confidence interval	Person-time	Failures	Rate (/1,000 person-yr)	95% CI	IRR	95% Confidence interval					
13	Total	2,687	67	24.93	19.62	31.68	749	15	20.04	12.08	33.24	0.80	0.43	1.42	459	14	30.49	18.06	51.48	1.22	0.63	2.20
	20.00	9	0	0.00	-	-	2	0	0.00	-	-	-	-	-	1	0	0.00	-	-	-	-	-
	30.00	107	0	0.00	-	-	35	0	0.00	-	-	-	-	-	19	0	0.00	-	-	-	-	-
	40.00	421	8	19.02	9.51	38.03	137	2	14.61	3.65	58.40	0.77	0.08	3.85	69	1	14.54	2.05	103.24	0.76	0.02	5.70
	50.00	816	14	17.16	10.16	28.97	211	2	9.46	2.37	37.83	0.55	0.06	2.40	137	3	21.97	7.08	68.11	1.28	0.24	4.59
	60.00	888	33	37.15	26.41	52.25	264	8	30.31	15.16	60.61	0.82	0.33	1.80	163	5	30.67	12.77	73.70	0.83	0.25	2.13
	70.00	416	11	26.41	14.63	47.69	94	3	31.89	10.29	98.89	1.21	0.22	4.57	67	5	75.04	31.23	180.29	2.84	0.77	8.87
	80.00	29	1	34.02	4.79	241.48	5	0	0.00	-	-	0.00	0.00	214.20	4	0	0.00	-	-	0.00	0.00	293.35
14	Total	1,353	36	26.60	19.19	36.88	365	6	16.43	7.38	36.58	0.62	0.21	1.48	241	8	33.15	16.58	66.29	1.25	0.50	2.73
	20.00	4	0	0.00	-	-	1	0	0.00	-	-	-	-	-	1	0	0.00	-	-	-	-	-
	30.00	59	1	16.91	2.38	120.04	16	0	0.00	-	-	0.00	0.00	140.85	12	1	86.30	12.16	612.63	5.10	0.07	400.60
	40.00	224	6	26.84	12.06	59.74	65	0	0.00	-	-	0.00	0.00	2.94	41	0	0.00	-	-	0.00	0.00	4.68
	50.00	423	10	23.65	12.73	43.96	104	2	19.20	4.80	76.76	0.81	0.09	3.81	74	2	27.17	6.79	108.62	1.15	0.12	5.39
	60.00	429	8	18.66	9.33	37.31	134	2	14.94	3.74	59.74	0.80	0.08	4.01	87	4	45.83	17.20	122.10	2.46	0.54	9.17
	70.00	202	10	49.43	26.59	91.86	43	2	46.34	11.59	185.30	0.94	0.10	4.40	27	1	37.60	5.30	266.95	0.76	0.02	5.35
	80.00	13	1	75.97	10.70	539.30	1	0	0.00	-	-	0.00	0.00	344.06	1	0	0.00	-	-	0.00	0.00	440.17
15	Total	258	3	11.63	3.75	36.07						1.19	0.02	14.87						5.58	0.75	41.68
	20.00	0	0	0.00	-	-	0	0	0.00	-	-	-	-	-	3	0	0.00	-	-	-	-	-
	30.00	13	0	0.00	-	-	3	0	0.00	-	-	-	-	-	10	1	96.74	13.63	686.78	-	-	-
	40.00	41	0	0.00	-	-	11	0	0.00	-	-	-	-	-	15	1	68.52	9.65	486.43	-	-	0.10
	50.00	78	1	12.81	1.80	90.94	20	0	0.00	-	-	0.00	0.00	151.28	16	0	0.00	-	-	5.35	0.07	419.89
	60.00	86	2	23.31	5.83	93.22	28	1	35.24	4.96	250.15	1.51	0.03	29.03	3	1	387.53	54.59	2751.17	0.00	0.00	28.93
	70.00	38	0	0.00	-	-	10	0	0.00	-	-	-	-	-	0	0	0.00	-	-	-	-	0.37
	80.00	2	0	0.00	-	-						-	-	-						-	-	-

Rate is calculated per 1,000 patients. For example, the IRR in the result of the temporary stoma is the IRR value of the temporary stoma group against the incidence rate of no stoma group. IRR, incidence rate ratio.