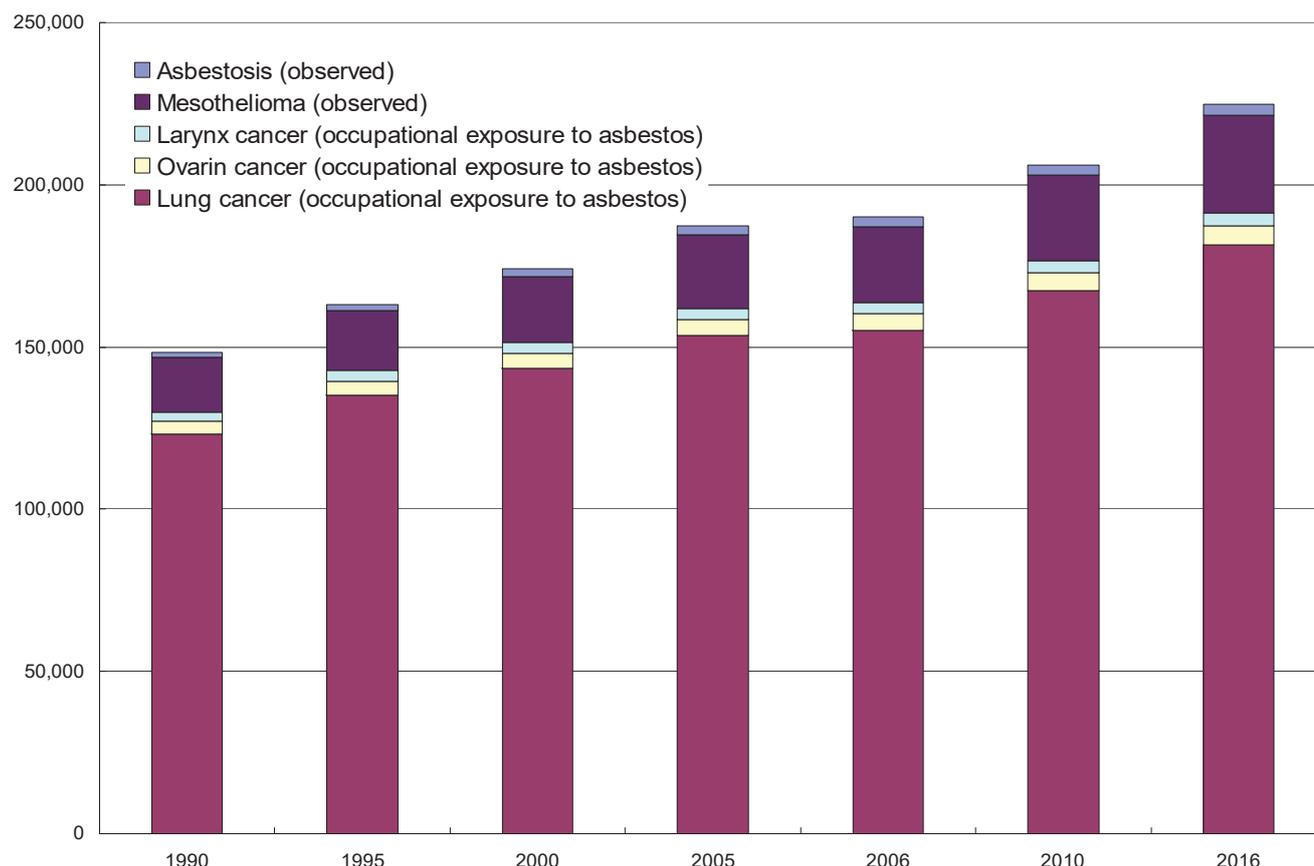


## Global: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



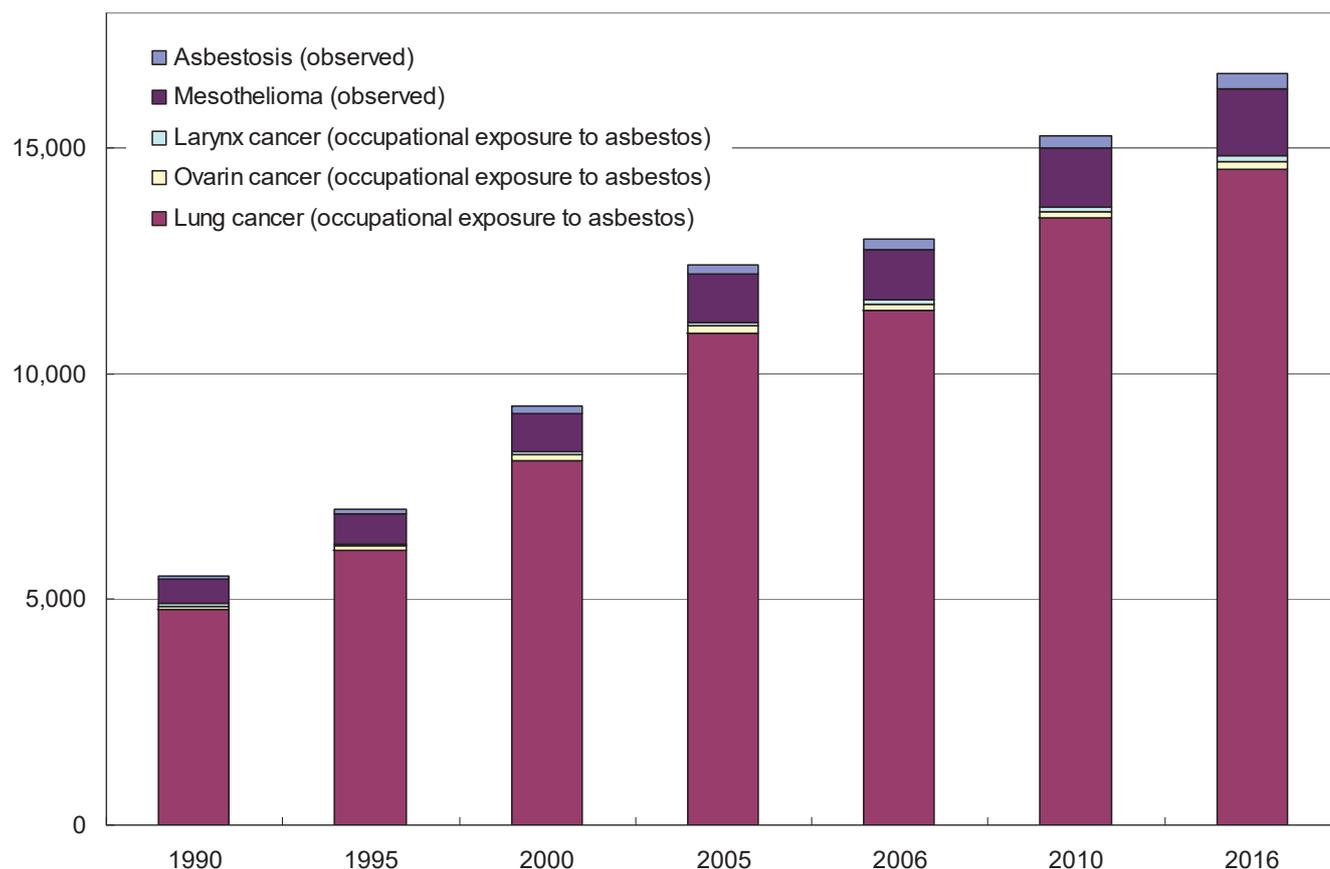
## Global: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	146,844	161,404	172,309	185,360	203,738	222,321
Mesothelioma (occup) - A	15,206	16,722	18,559	20,720	24,107	27,612
Lung Cancer (occup) - B	123,231	135,225	143,359	153,540	167,304	181,450
Ovarin Cancer (occup) - C	3,845	4,359	4,754	5,051	5,719	6,022
Larynx Cancer (occup) - D	2,954	3,159	3,194	3,237	3,424	3,743
Asbestosis (occup) - E	1,608	1,939	2,442	2,812	3,185	3,495
Mesothelioma (total) - A+F	16,783	18,483	20,493	22,816	26,423	30,208
Mesothelioma (non-occup) - F	1,578	1,762	1,934	2,096	2,317	2,596
% of occupational - A/(A+F)	90.6%	90.5%	90.6%	90.8%	91.2%	91.4%
LC / Meso - B/A	8.10	8.09	7.72	7.41	6.94	6.57
Asbestosis (total) - G	1,609	1,940	2,442	2,813	3,186	3,495
Total = B+C+D+(A+F)+G	148,422	163,166	174,243	187,456	206,055	224,918

## Japan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



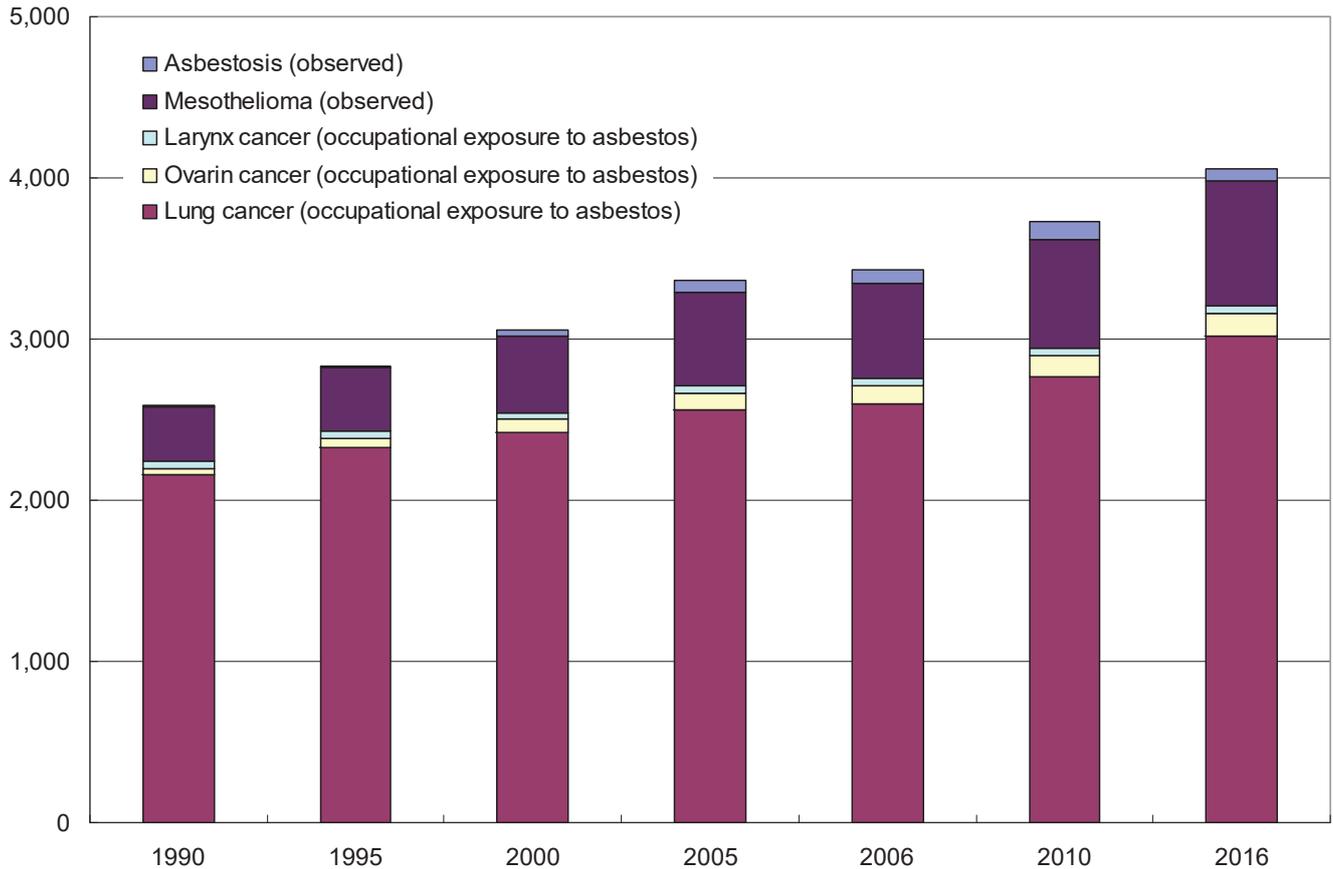
## Japan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	5,487	6,956	9,224	12,378	15,234	16,591
Mesothelioma (occup) - A	495	594	785	1,027	1,248	1,449
Lung Cancer (occup) - B	4,788	6,089	8,091	10,911	13,445	14,529
Ovarin Cancer (occup) - C	67	93	119	144	150	189
Larynx Cancer (occup) - D	52	58	68	82	95	105
Asbestosis (occup) - E	85	122	161	215	295	320
Mesothelioma (total) - A+F	540	641	835	1,079	1,303	1,506
Mesothelioma (non-occup) - F	45	47	50	52	55	57
% of occupational - A/(A+F)	91.8%	92.7%	94.0%	95.2%	95.8%	96.2%
LC / Meso - B/A	9.67	10.26	10.31	10.63	10.77	10.03
Asbestosis (total) - G	85	122	161	215	295	320
Total = B+C+D+(A+F)+G	5,531	7,003	9,274	12,431	15,289	16,648

## Australia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



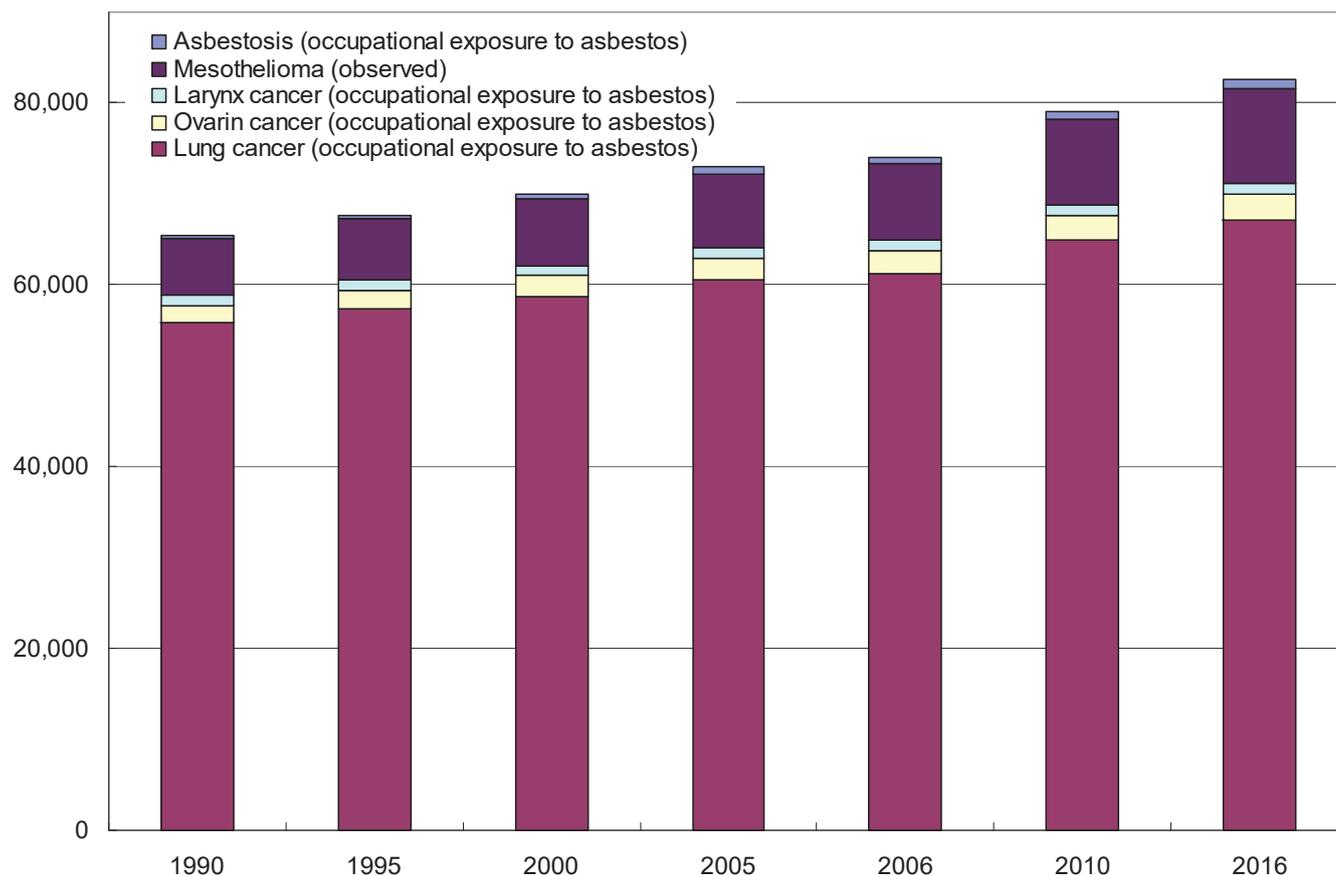
## Australia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	3,057	3,334	3,555	3,893	4,275	4,657
Mesothelioma (occup) - A	336	389	462	568	668	766
Lung Cancer (occup) - B	2,161	2,329	2,423	2,558	2,768	3,017
Ovarin Cancer (occup) - C	38	56	81	109	132	140
Larynx Cancer (occup) - D	42	44	43	43	45	48
Asbestosis (occup) - E	4	6	43	77	110	77
Mesothelioma (total) - A+F	342	396	469	576	676	776
Mesothelioma (non-occup) - F	6	7	7	8	9	10
% of occupational - A/(A+F)	98.1%	98.3%	98.4%	98.6%	98.7%	98.7%
LC / Meso - B/A	6.44	5.99	5.25	4.51	4.15	3.94
Asbestosis (total) - G	4	6	43	77	110	77
Total = B+C+D+(A+F)+G	2,587	2,831	3,058	3,363	3,732	4,058

## W Europe: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



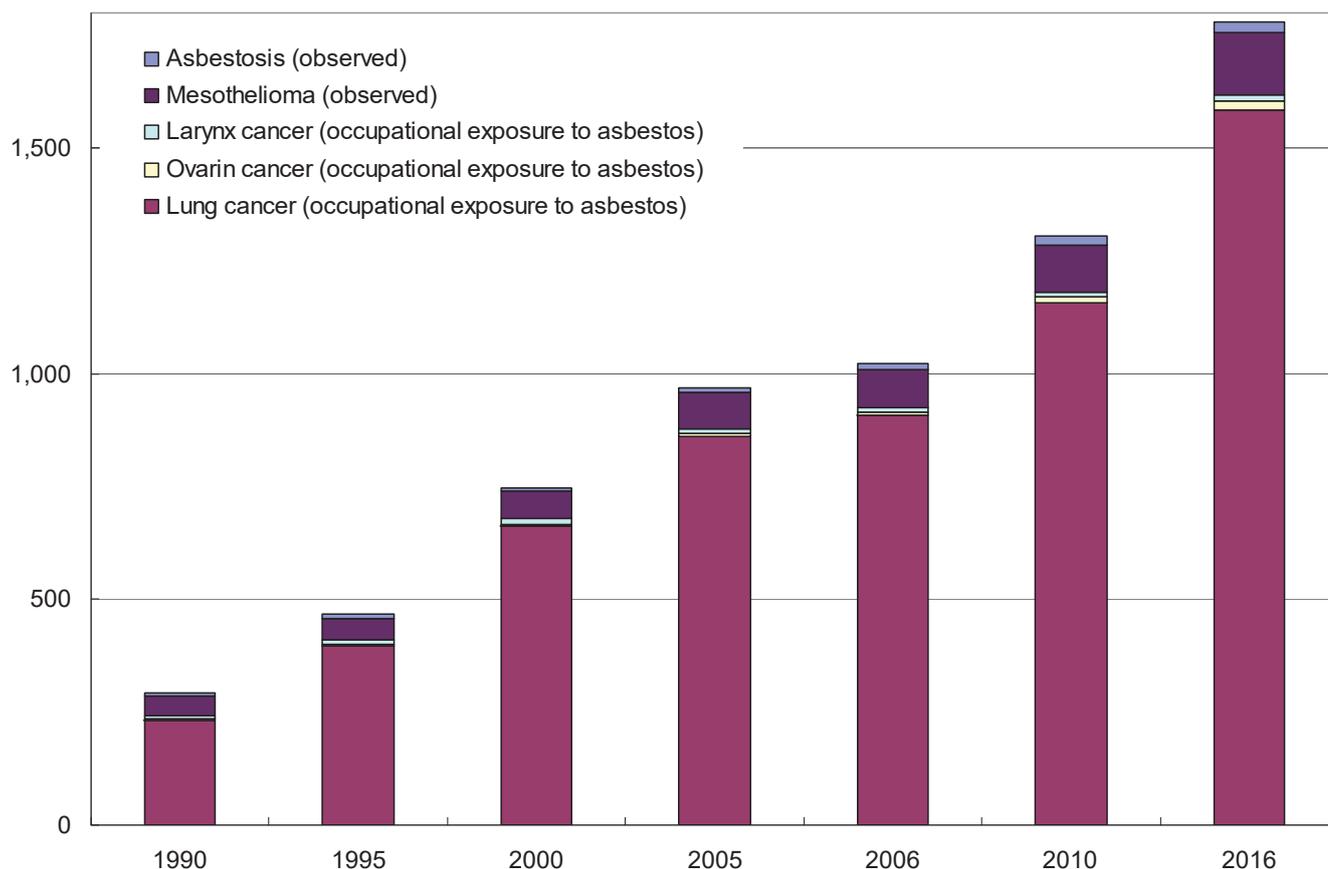
## W Europe: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	65,291	67,442	69,835	72,777	78,842	82,350
Mesothelioma (occup) - A	6,048	6,486	7,188	7,987	9,198	10,296
Lung Cancer (occup) - B	55,887	57,398	58,725	60,596	64,910	67,173
Ovarin Cancer (occup) - C	1,747	1,965	2,264	2,372	2,719	2,743
Larynx Cancer (occup) - D	1,279	1,227	1,161	1,128	1,163	1,190
Asbestosis (occup) - E	330	366	497	695	852	948
Mesothelioma (total) - A+F	6,195	6,640	7,348	8,153	9,372	10,479
Mesothelioma (non-occup) - F	148	154	160	166	174	183
% of occupational - A/(A+F)	97.6%	97.7%	97.8%	98.0%	98.1%	98.3%
LC / Meso - B/A	9.24	8.85	8.17	7.59	7.06	6.52
Asbestosis (total) - G	330	366	497	695	852	948
Total = B+C+D+(A+F)+G	65,439	67,596	69,995	72,943	79,015	82,533

## Korea: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



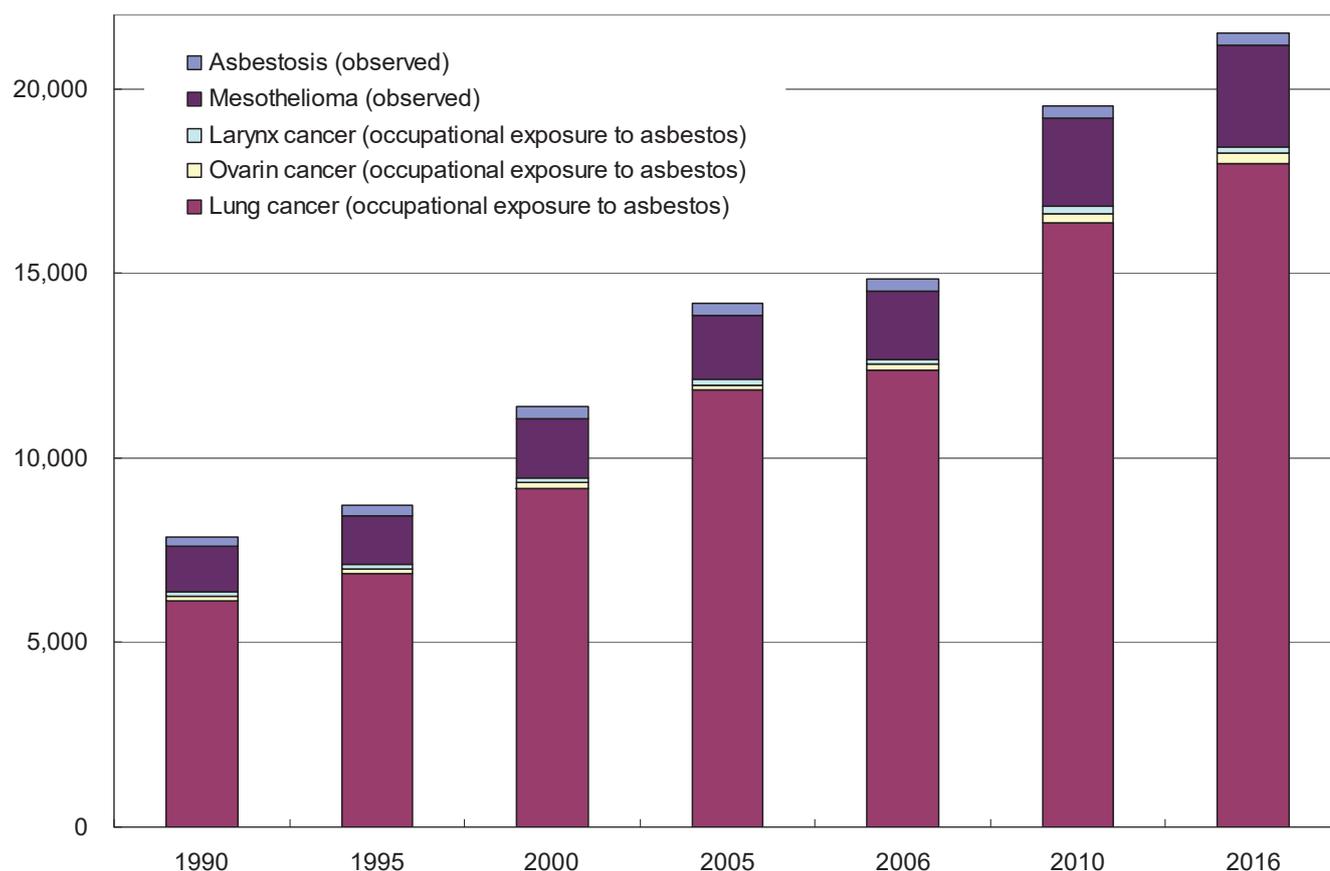
## Korea: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	282	453	733	953	1,286	1,760
Mesothelioma (occup) - A	32	35	45	63	86	117
Lung Cancer (occup) - B	234	398	662	860	1,159	1,586
Ovarin Cancer (occup) - C	3	4	6	9	12	18
Larynx Cancer (occup) - D	7	9	11	10	11	15
Asbestosis (occup) - E	6	7	8	11	18	24
Mesothelioma (total) - A+F	44	48	60	79	104	138
Mesothelioma (non-occup) - F	12	13	14	16	18	21
% of occupational - A/(A+F)	72.8%	72.8%	75.9%	79.7%	82.5%	85.0%
LC / Meso - B/A	7.31	11.45	14.59	13.73	13.44	13.50
Asbestosis (total) - G	6	7	8	11	18	24
Total = B+C+D+(A+F)+G	294	466	747	969	1,304	1,780

## China: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



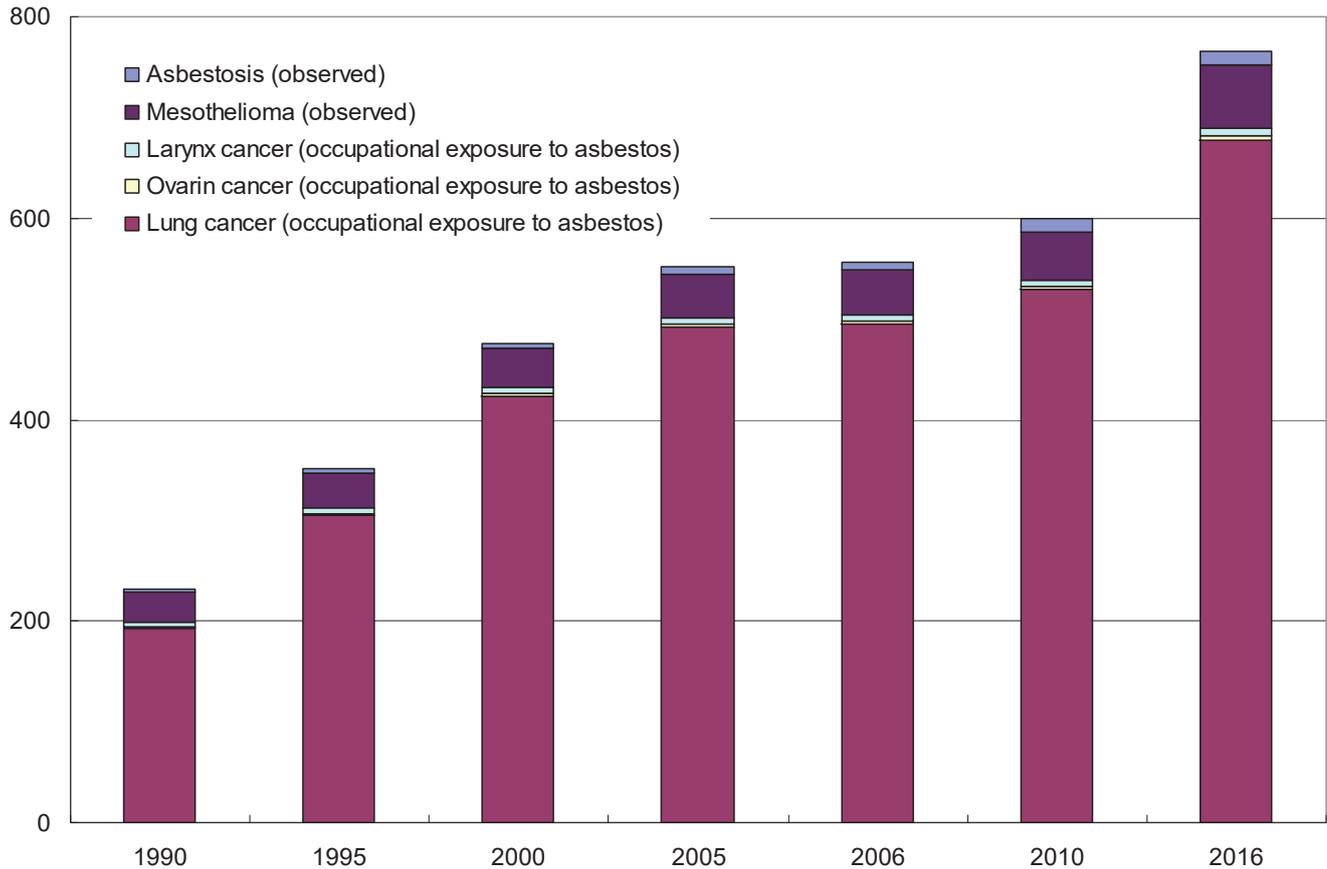
## China: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	7,477	8,316	10,936	13,702	18,992	20,940
Mesothelioma (occup) - A	884	934	1,139	1,256	1,875	2,178
Lung Cancer (occup) - B	6,111	6,852	9,177	11,825	16,382	17,971
Ovarin Cancer (occup) - C	135	133	167	159	243	270
Larynx Cancer (occup) - D	109	114	130	133	176	198
Asbestosis (occup) - E	238	284	322	330	318	323
Mesothelioma (total) - A+F	1,245	1,344	1,584	1,727	2,399	2,747
Mesothelioma (non-occup) - F	361	410	445	471	524	569
% of occupational - A/(A+F)	71.0%	69.5%	71.9%	72.7%	78.1%	79.3%
LC / Meso - B/A	6.91	7.33	8.06	9.42	8.74	8.25
Asbestosis (total) - G	238	284	322	330	318	323
Total = B+C+D+(A+F)+G	7,838	8,726	11,381	14,173	19,517	21,510

## Taiwan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



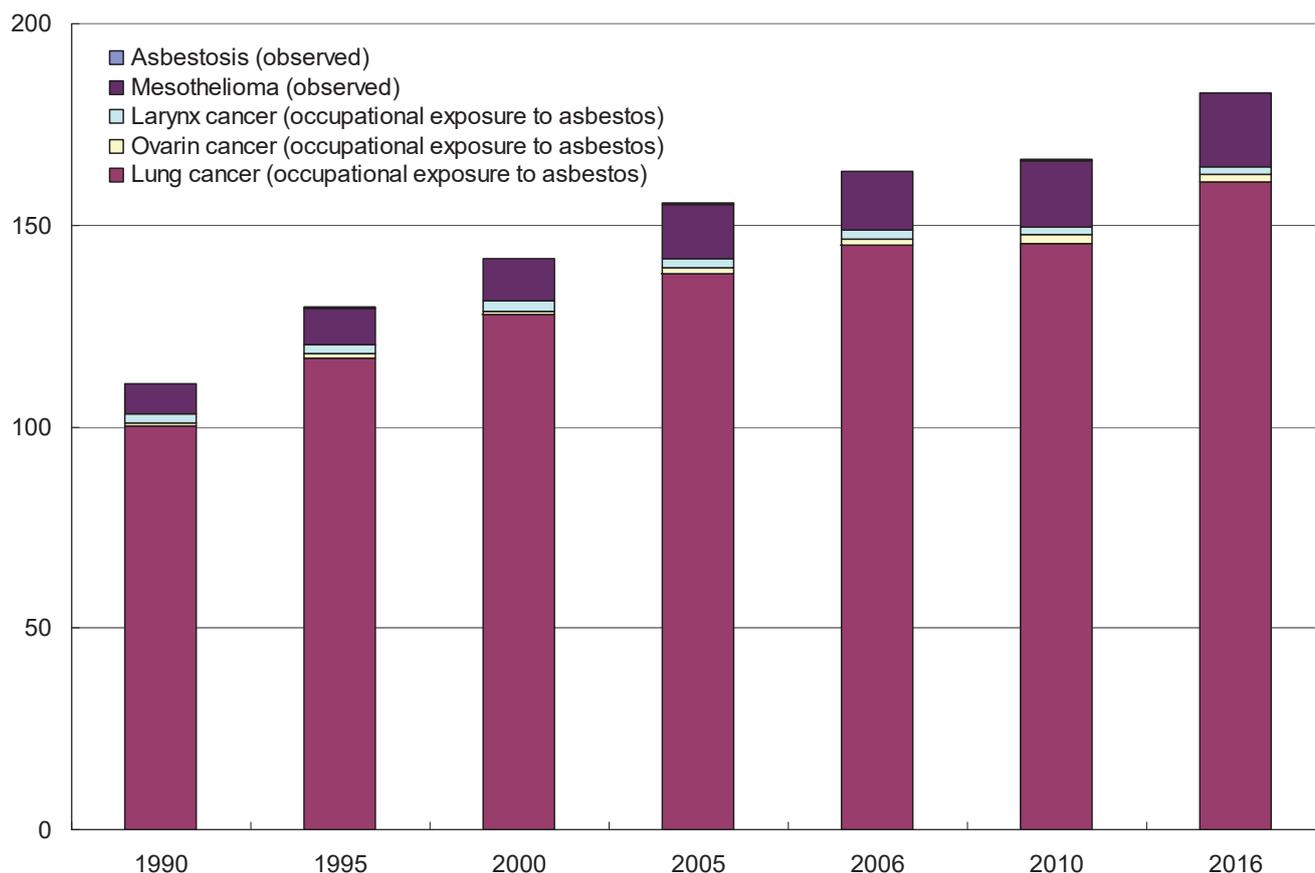
## Taiwan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	225	343	467	543	590	756
Mesothelioma (occup) - A	23	27	31	35	39	52
Lung Cancer (occup) - B	193	305	424	492	529	677
Ovarin Cancer (occup) - C	2	2	3	3	4	5
Larynx Cancer (occup) - D	4	5	6	6	6	8
Asbestosis (occup) - E	3	4	4	7	13	14
Mesothelioma (total) - A+F	30	35	39	44	48	62
Mesothelioma (non-occup) - F	7	8	8	9	9	10
% of occupational - A/(A+F)	77.0%	77.9%	78.9%	80.0%	81.1%	83.8%
LC / Meso - B/A	8.29	11.17	13.79	14.04	13.60	13.00
Asbestosis (total) - G	3	4	4	7	13	14
Total = B+C+D+(A+F)+G	232	351	475	552	599	766

## Singapore: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



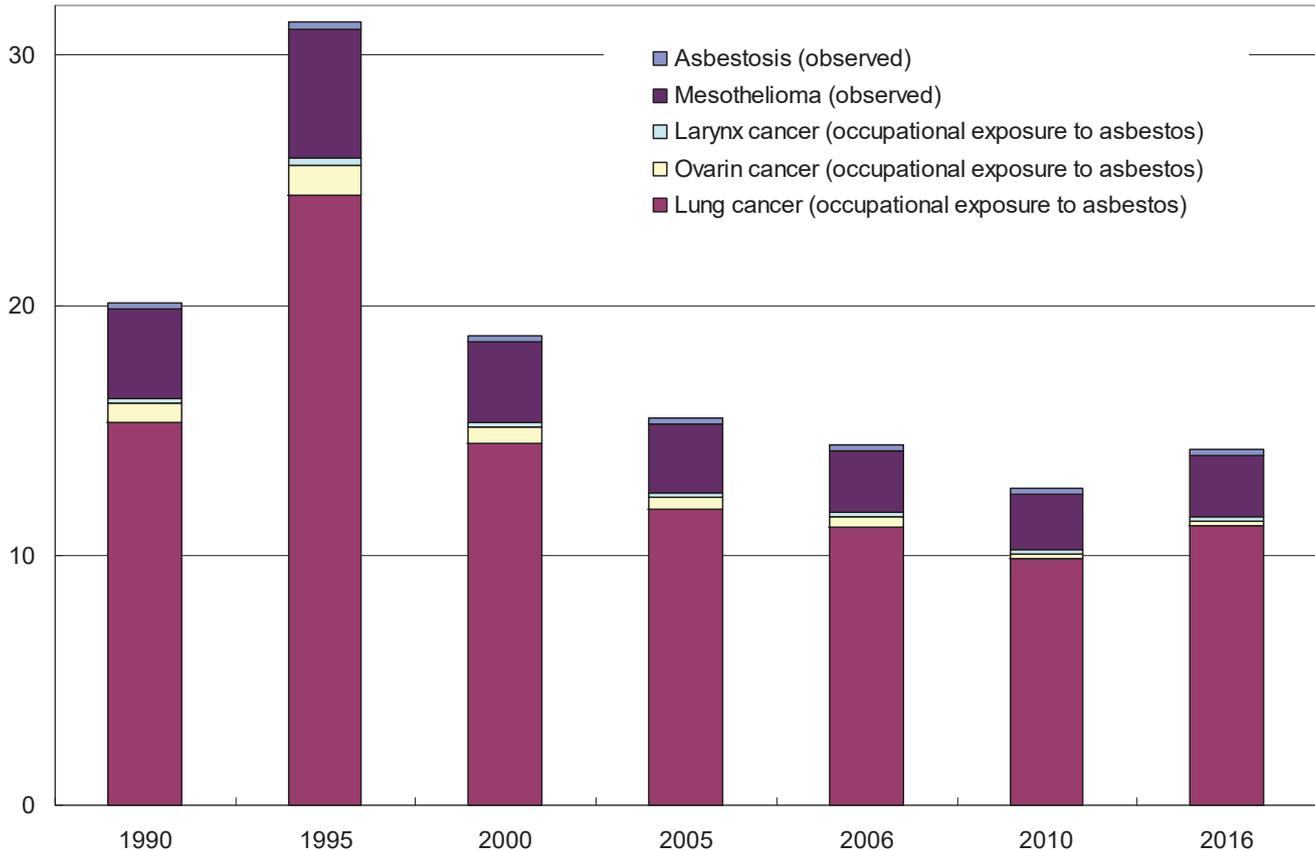
## Singapore: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	110	129	141	154	165	182
Mesothelioma (occup) - A	7	8	10	12	15	17
Lung Cancer (occup) - B	100	117	128	138	145	161
Ovarin Cancer (occup) - C	1	1	1	2	2	2
Larynx Cancer (occup) - D	2	2	2	2	2	2
Asbestosis (occup) - E	0	0	0	0	0	0
Mesothelioma (total) - A+F	8	9	11	14	17	18
Mesothelioma (non-occup) - F	1	1	1	1	1	1
% of occupational - A/(A+F)	90.1%	90.4%	90.3%	91.4%	92.1%	92.2%
LC / Meso - B/A	14.53	14.26	13.41	11.07	9.45	9.51
Asbestosis (total) - G	0	0	0	0	0	0
Total = B+C+D+(A+F)+G	111	130	142	155	166	183

## Mongolia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



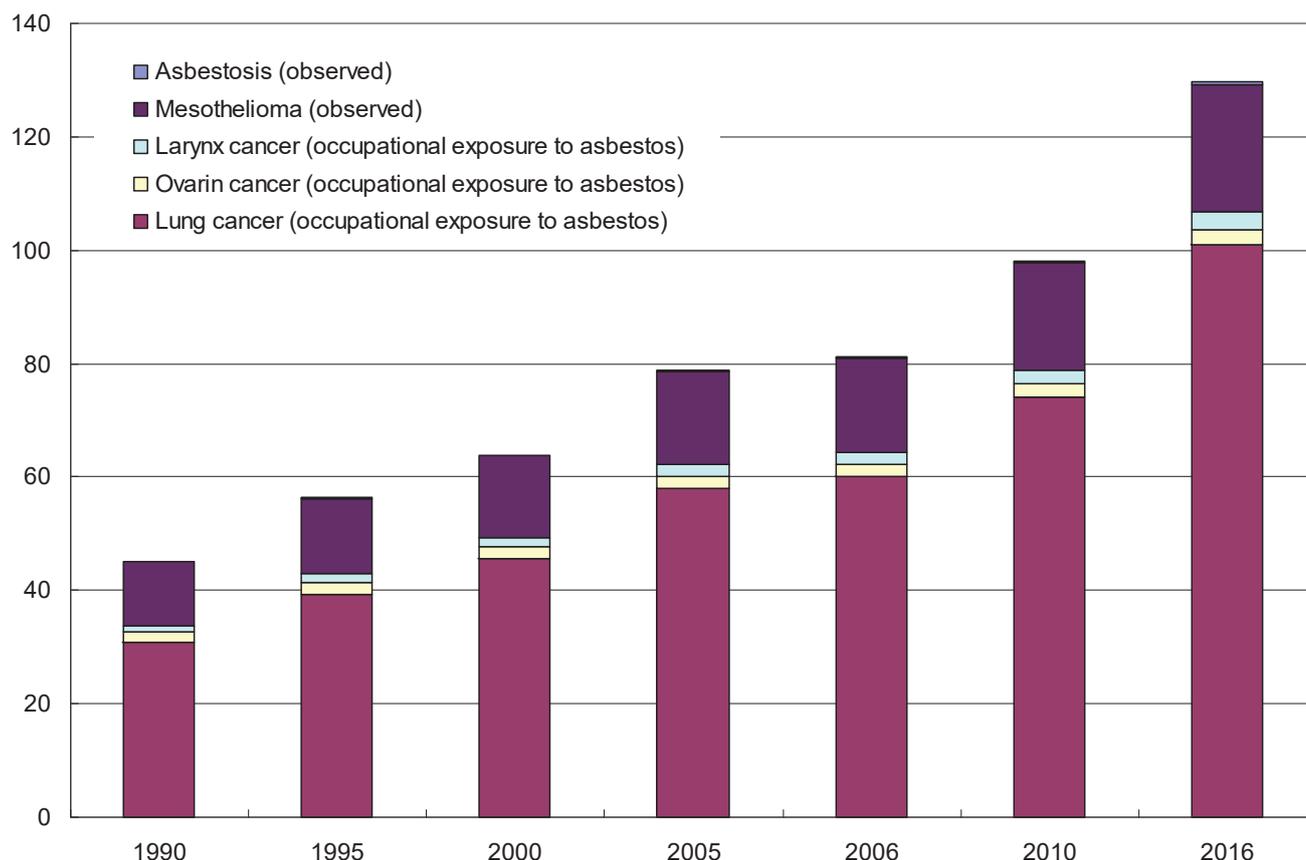
## Mongolia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	20	31	18	15	12	13
Mesothelioma (occup) - A	3	5	3	2	2	2
Lung Cancer (occup) - B	15	24	14	12	10	11
Ovarin Cancer (occup) - C	1	1	1	0	0	0
Larynx Cancer (occup) - D	0	0	0	0	0	0
Asbestosis (occup) - E	0	0	0	0	0	0
Mesothelioma (total) - A+F	4	5	3	3	2	2
Mesothelioma (non-occup) - F	0	0	1	1	1	1
% of occupational - A/(A+F)	88.4%	90.9%	83.3%	77.3%	68.6%	67.5%
LC / Meso - B/A	4.79	5.18	5.41	5.63	6.50	6.67
Asbestosis (total) - G	0	0	0	0	0	0
Total = B+C+D+(A+F)+G	20	31	19	15	13	14

## Cambodia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



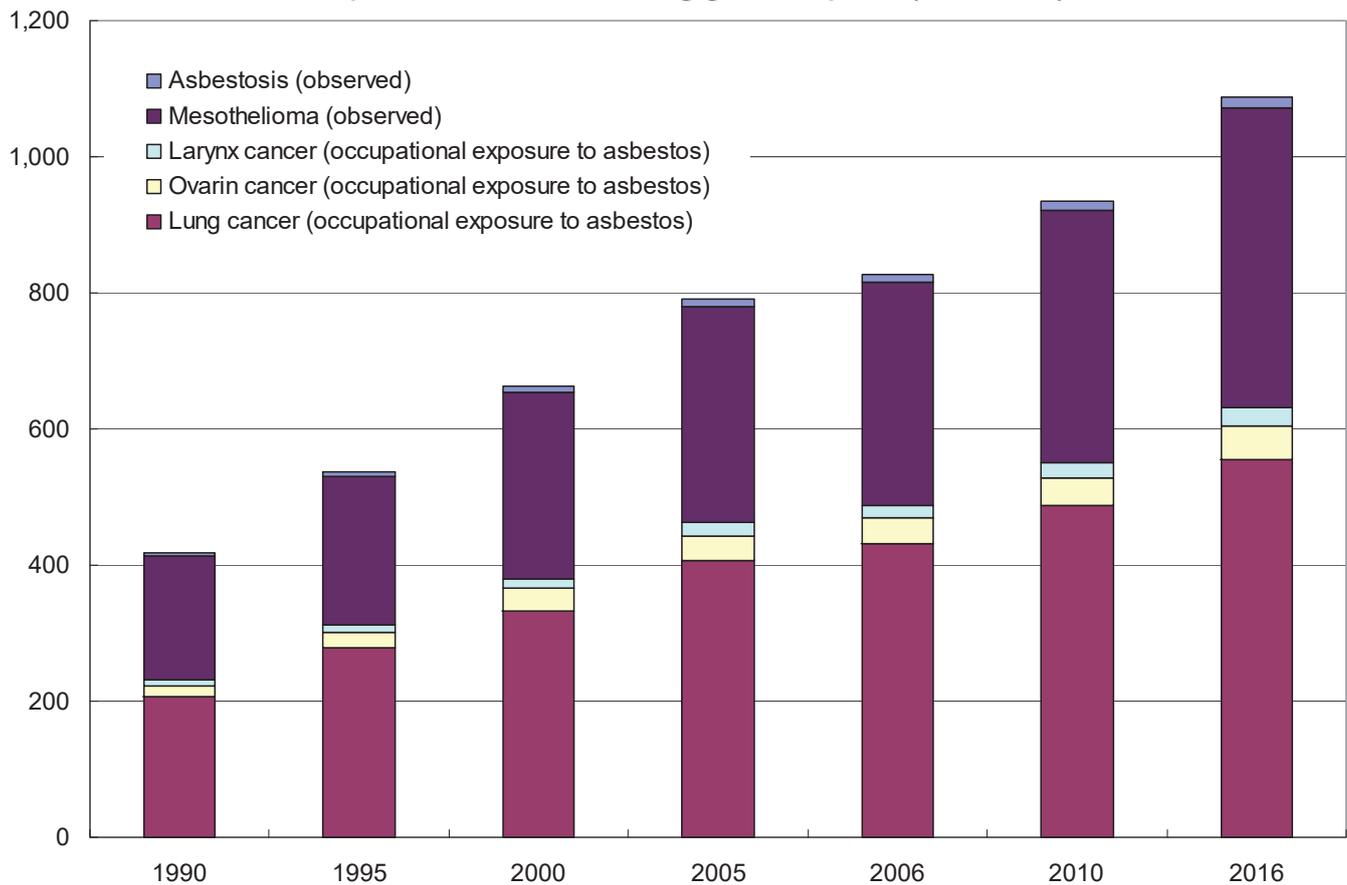
## Cambodia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	43	53	60	75	93	124
Mesothelioma (occup) - A	9	10	11	12	14	17
Lung Cancer (occup) - B	31	39	46	58	74	101
Ovarin Cancer (occup) - C	2	2	2	2	2	3
Larynx Cancer (occup) - D	1	1	2	2	2	3
Asbestosis (occup) - E	0	0	0	0	0	0
Mesothelioma (total) - A+F	11	13	14	17	19	23
Mesothelioma (non-occup) - F	3	3	4	4	5	6
% of occupational - A/(A+F)	76.7%	77.1%	74.8%	74.2%	73.8%	74.5%
LC / Meso - B/A	3.59	3.84	4.21	4.74	5.28	5.99
Asbestosis (total) - G	0	0	0	0	0	0
Total = B+C+D+(A+F)+G	45	56	64	79	98	130

## Indonesia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



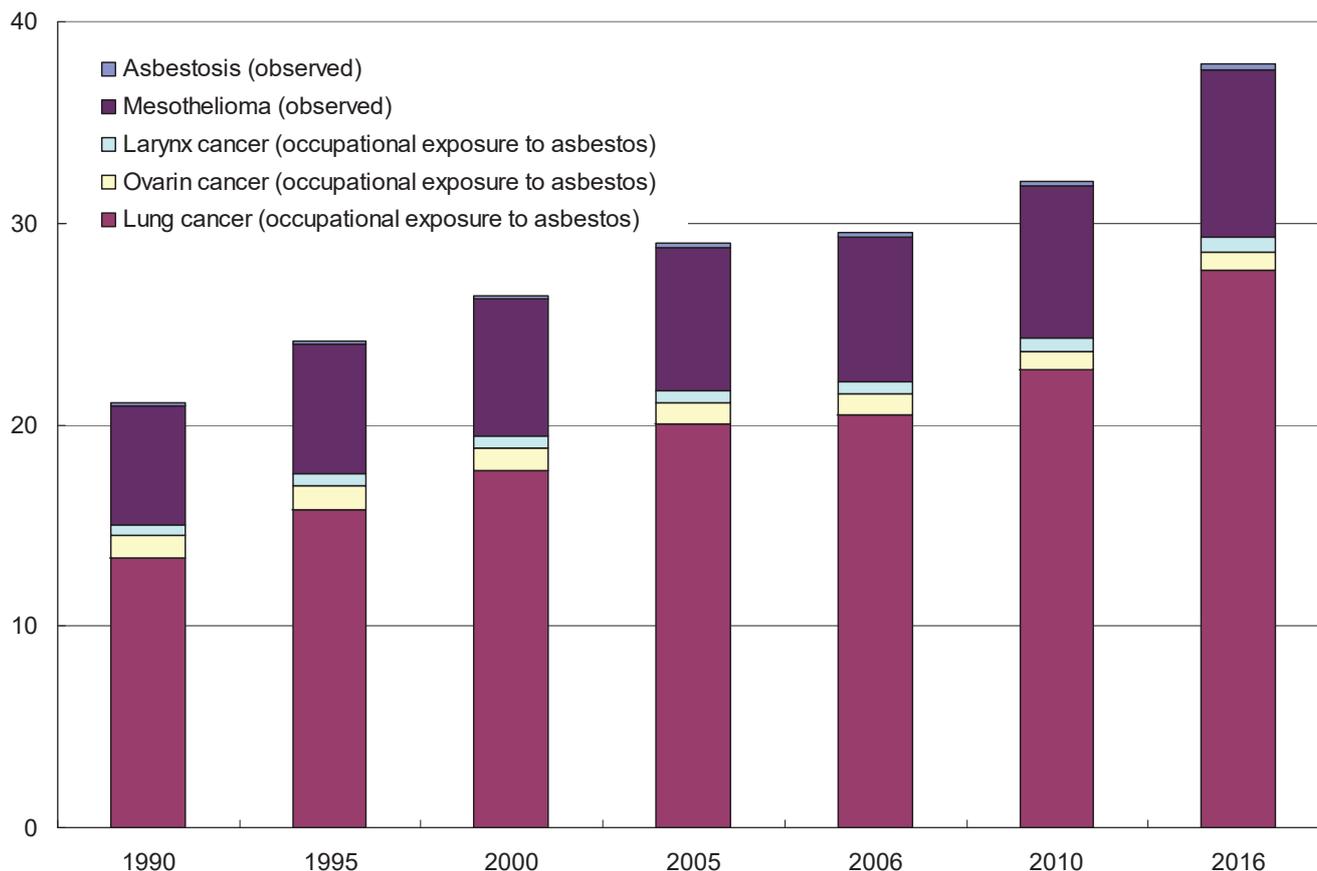
## Indonesia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	360	470	586	707	843	984
Mesothelioma (occup) - A	122	150	197	235	279	337
Lung Cancer (occup) - B	207	279	332	406	487	556
Ovarin Cancer (occup) - C	16	22	33	37	41	47
Larynx Cancer (occup) - D	9	12	15	18	23	29
Asbestosis (occup) - E	5	7	9	10	13	15
Mesothelioma (total) - A+F	181	217	273	318	371	440
Mesothelioma (non-occup) - F	58	66	76	83	92	103
% of occupational - A/(A+F)	67.7%	69.4%	72.1%	73.8%	75.3%	76.5%
LC / Meso - B/A	1.69	1.86	1.69	1.73	1.74	1.65
Asbestosis (total) - G	5	7	9	10	13	15
Total = B+C+D+(A+F)+G	418	537	662	790	935	1,088

## Laos: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



## Laos: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	20	23	25	27	30	35
Mesothelioma (occup) - A	5	5	5	5	5	6
Lung Cancer (occup) - B	13	16	18	20	23	28
Ovarin Cancer (occup) - C	1	1	1	1	1	1
Larynx Cancer (occup) - D	1	1	1	1	1	1
Asbestosis (occup) - E	0	0	0	0	0	0
Mesothelioma (total) - A+F	6	6	7	7	8	8
Mesothelioma (non-occup) - F	1	1	2	2	2	2
% of occupational - A/(A+F)	79.0%	77.9%	76.4%	74.7%	72.5%	70.9%
LC / Meso - B/A	2.86	3.13	3.40	3.78	4.16	4.69
Asbestosis (total) - G	0	0	0	0	0	0
Total = B+C+D+(A+F)+G	21	24	26	29	32	38

## Malaysia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



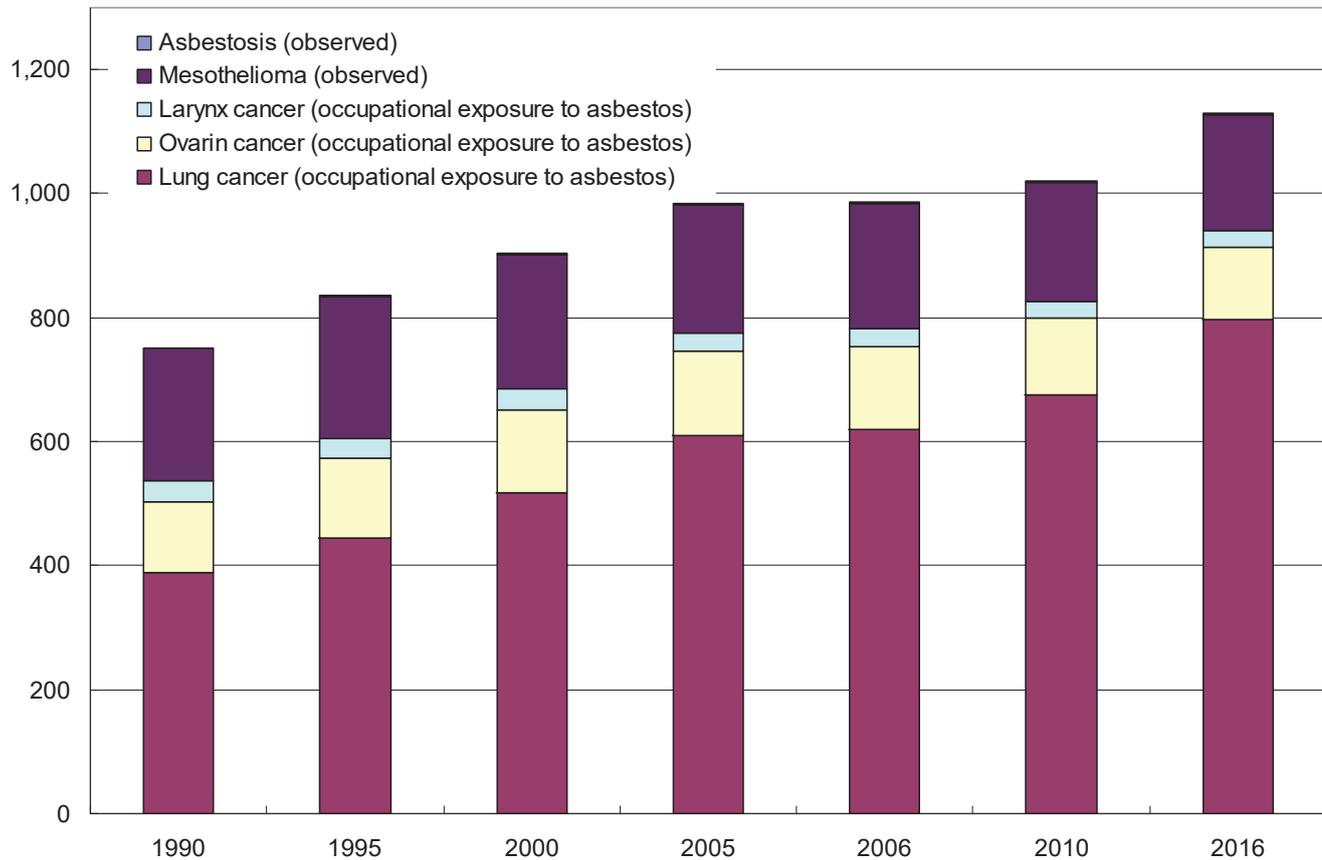
## Malaysia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	94	103	120	156	186	248
Mesothelioma (occup) - A	11	12	15	19	23	29
Lung Cancer (occup) - B	79	87	100	131	156	210
Ovarin Cancer (occup) - C	2	2	3	3	3	4
Larynx Cancer (occup) - D	2	2	2	2	3	4
Asbestosis (occup) - E	0	1	1	1	1	1
Mesothelioma (total) - A+F	16	18	22	27	32	40
Mesothelioma (non-occup) - F	5	6	7	8	9	11
% of occupational - A/(A+F)	67.6%	66.7%	67.4%	69.8%	71.4%	72.7%
LC / Meso - B/A	7.38	7.18	6.84	7.00	6.76	7.25
Asbestosis (total) - G	0	1	1	1	1	1
Total = B+C+D+(A+F)+G	99	109	127	164	195	259

## Myanmar: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



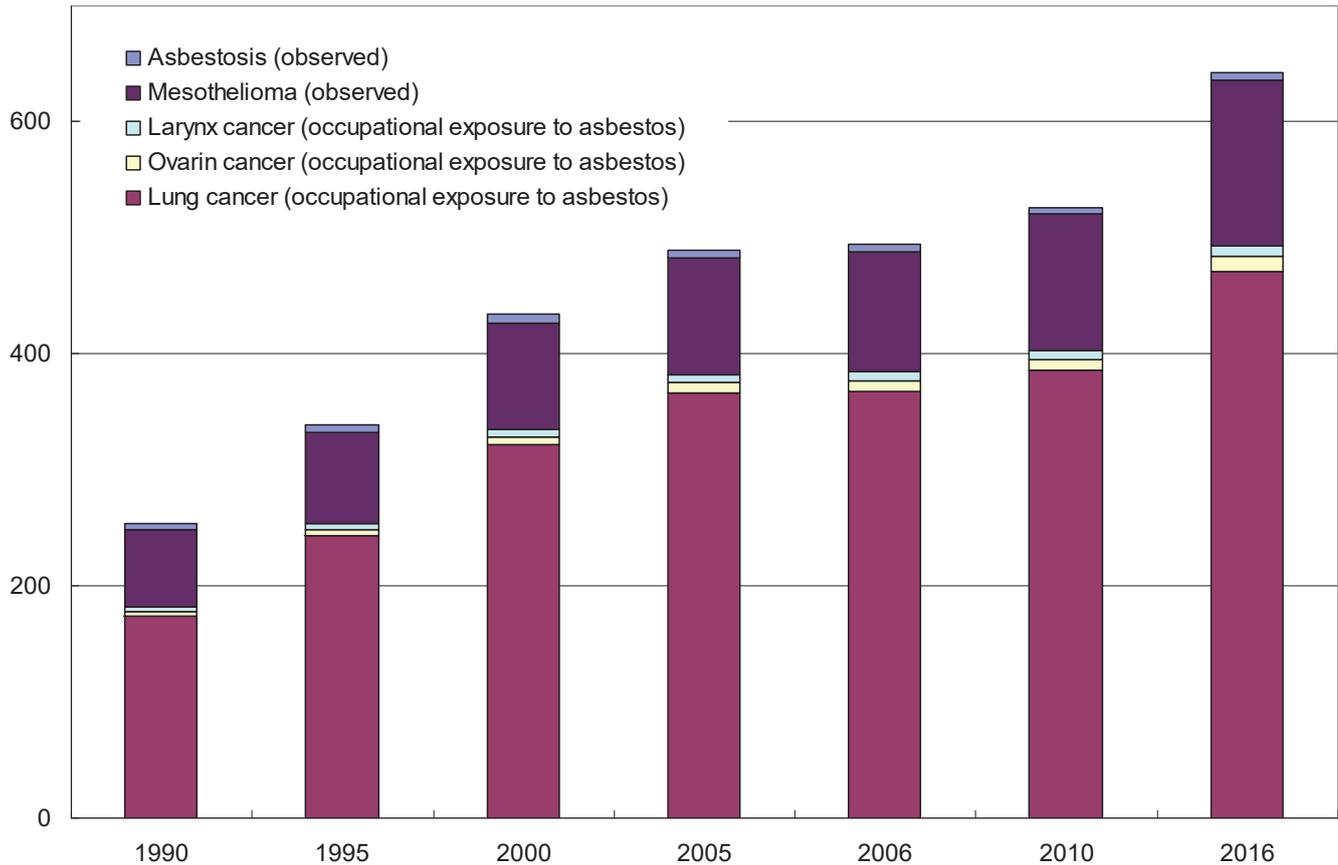
## Myanmar: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	737	819	886	965	1,001	1,108
Mesothelioma (occup) - A	199	212	200	188	172	166
Lung Cancer (occup) - B	389	444	517	609	675	798
Ovarin Cancer (occup) - C	114	128	135	136	125	117
Larynx Cancer (occup) - D	32	33	32	30	27	25
Asbestosis (occup) - E	1	1	2	2	2	3
Mesothelioma (total) - A+F	214	228	218	207	193	188
Mesothelioma (non-occup) - F	15	16	18	19	20	23
% of occupational - A/(A+F)	93.2%	92.8%	91.7%	90.7%	89.4%	87.9%
LC / Meso - B/A	1.95	2.10	2.59	3.25	3.91	4.81
Asbestosis (total) - G	1	1	2	2	2	3
Total = B+C+D+(A+F)+G	751	836	904	984	1,021	1,131

## Philippines: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



## Philippines: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	234	317	409	461	493	605
Mesothelioma (occup) - A	47	56	66	72	85	105
Lung Cancer (occup) - B	174	244	321	367	385	471
Ovarin Cancer (occup) - C	4	5	7	9	10	13
Larynx Cancer (occup) - D	4	5	7	7	8	9
Asbestosis (occup) - E	5	6	8	7	6	7
Mesothelioma (total) - A+F	67	79	91	101	117	142
Mesothelioma (non-occup) - F	20	23	26	28	33	38
% of occupational - A/(A+F)	70.6%	71.3%	72.0%	71.8%	72.2%	73.5%
LC / Meso - B/A	3.68	4.35	4.89	5.07	4.56	4.50
Asbestosis (total) - G	5	6	8	7	6	7
Total = B+C+D+(A+F)+G	254	339	435	490	526	643

## Sri Lanka: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



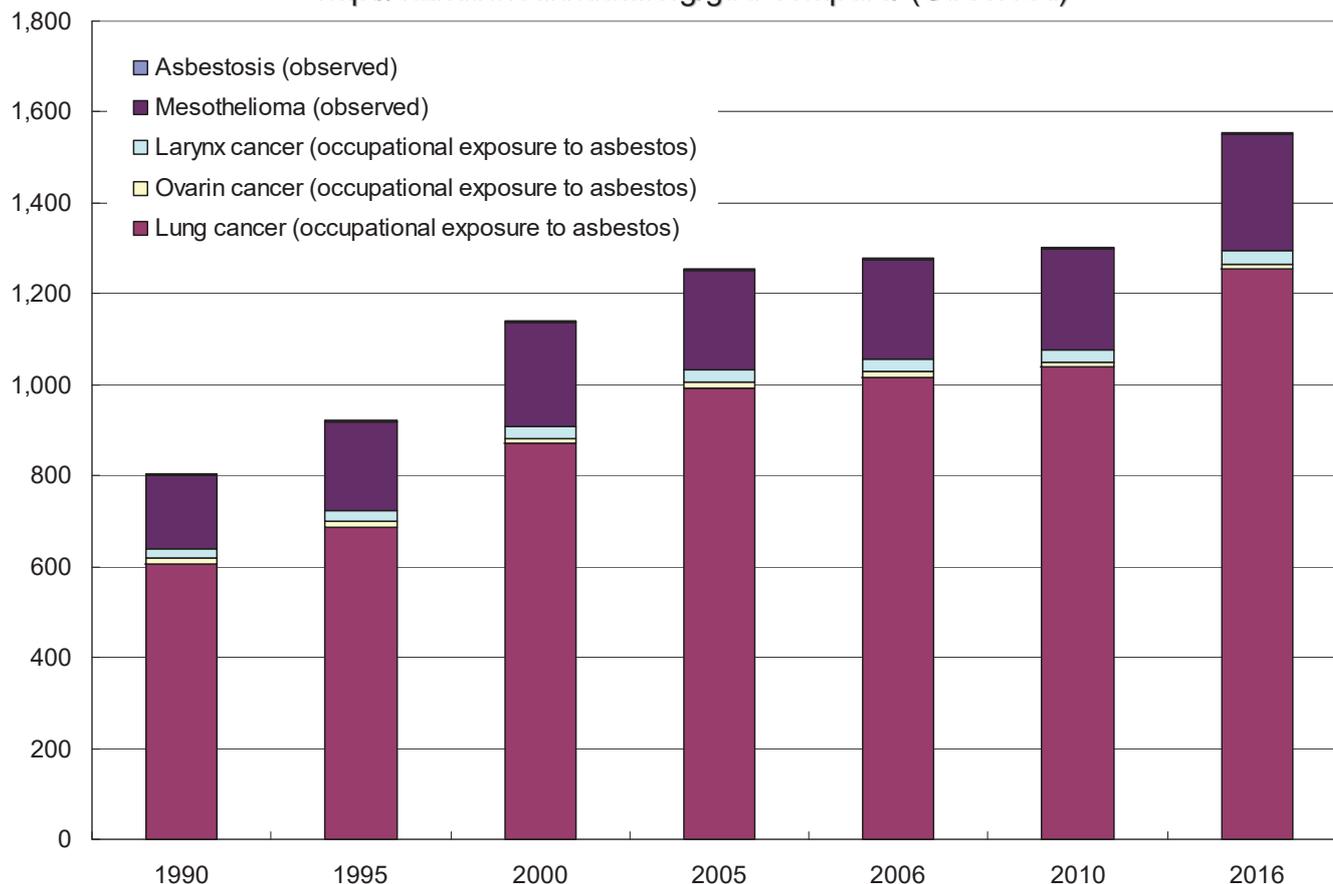
## Sri Lanka: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	91	111	131	153	162	193
Mesothelioma (occup) - A	35	44	51	55	56	71
Lung Cancer (occup) - B	50	61	72	89	95	110
Ovarin Cancer (occup) - C	3	4	4	5	5	7
Larynx Cancer (occup) - D	2	2	3	3	4	4
Asbestosis (occup) - E	1	1	1	1	1	1
Mesothelioma (total) - A+F	42	51	58	62	64	80
Mesothelioma (non-occup) - F	6	7	7	8	8	9
% of occupational - A/(A+F)	84.7%	86.0%	87.2%	87.7%	87.6%	89.1%
LC / Meso - B/A	1.41	1.39	1.42	1.64	1.70	1.55
Asbestosis (total) - G	1	1	1	1	1	1
Total = B+C+D+(A+F)+G	98	119	139	161	170	202

## Thailand: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



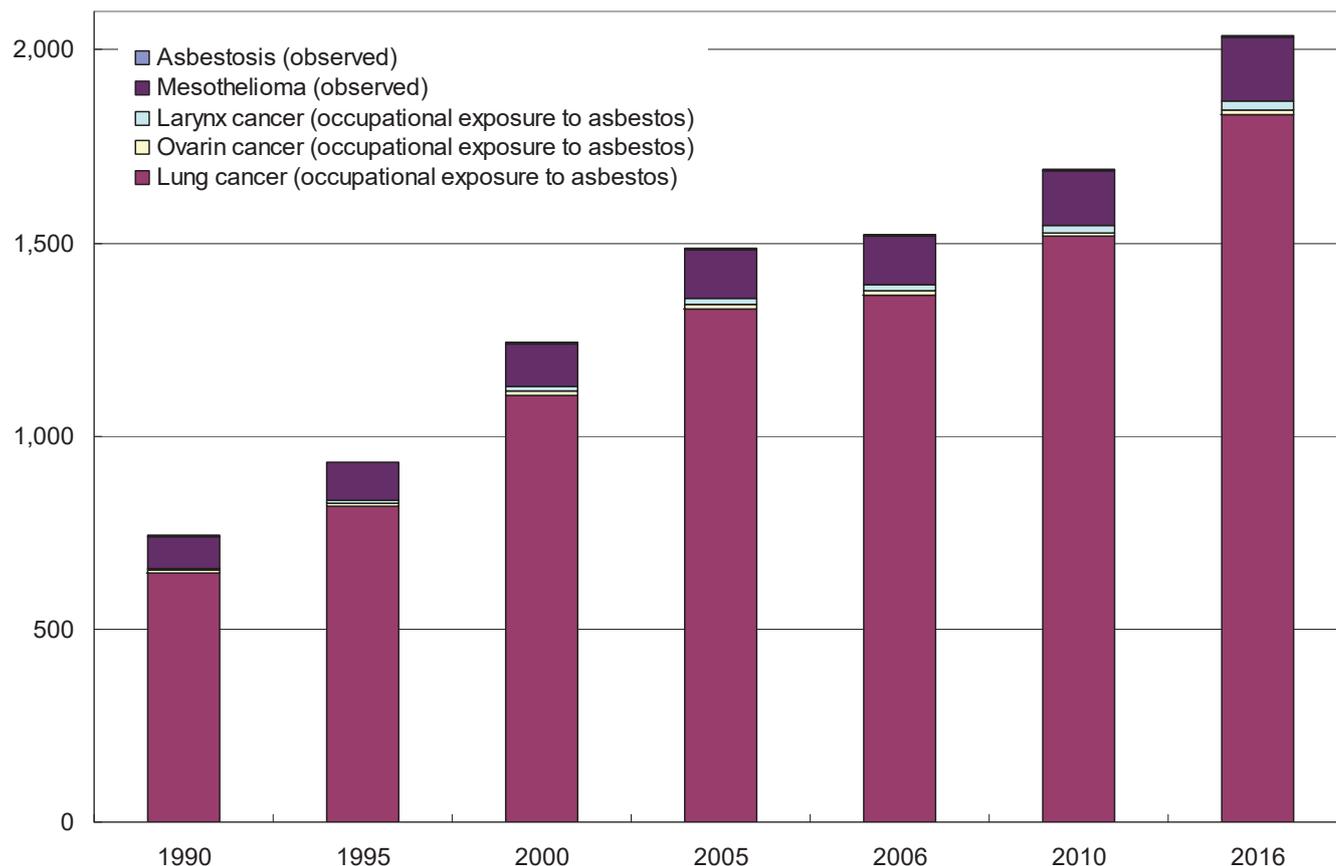
## Thailand: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	779	896	1,113	1,226	1,272	1,522
Mesothelioma (occup) - A	139	171	200	191	193	222
Lung Cancer (occup) - B	606	688	871	994	1,038	1,255
Ovarin Cancer (occup) - C	11	11	12	11	11	10
Larynx Cancer (occup) - D	20	23	26	27	26	31
Asbestosis (occup) - E	2	3	3	3	4	4
Mesothelioma (total) - A+F	162	198	229	221	225	255
Mesothelioma (non-occup) - F	24	27	29	30	32	34
% of occupational - A/(A+F)	85.3%	86.6%	87.4%	86.4%	86.0%	86.8%
LC / Meso - B/A	4.38	4.01	4.35	5.20	5.37	5.66
Asbestosis (total) - G	2	3	3	3	4	4
Total = B+C+D+(A+F)+G	803	923	1,141	1,256	1,304	1,556

## Vietnam: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



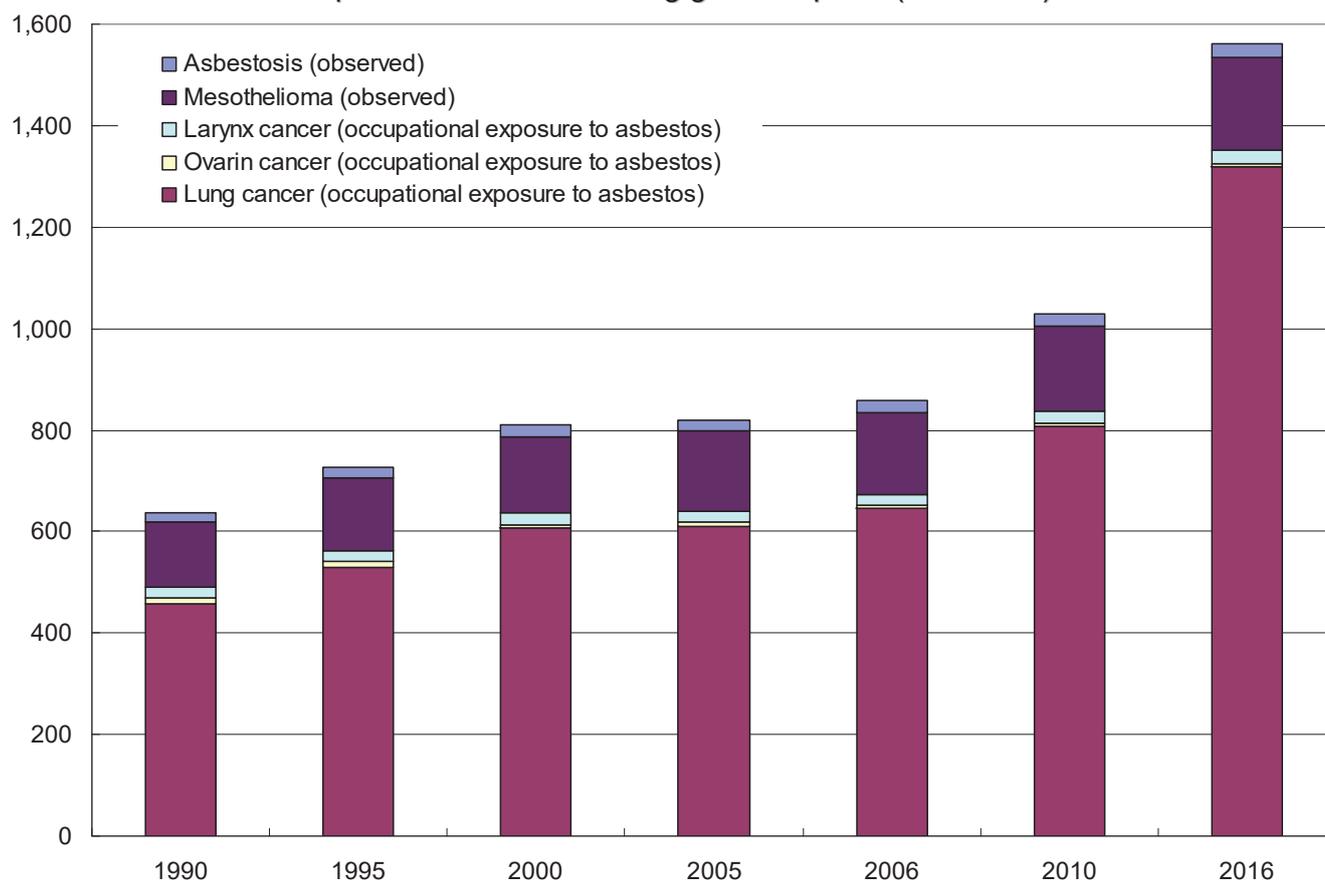
## Vietnam: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	721	909	1,215	1,456	1,658	2,000
Mesothelioma (occup) - A	63	72	84	95	108	127
Lung Cancer (occup) - B	643	817	1,105	1,331	1,516	1,834
Ovarin Cancer (occup) - C	8	10	10	10	11	11
Larynx Cancer (occup) - D	5	8	14	17	19	23
Asbestosis (occup) - E	2	2	2	3	4	5
Mesothelioma (total) - A+F	85	96	111	125	141	165
Mesothelioma (non-occup) - F	22	25	28	30	33	37
% of occupational - A/(A+F)	74.5%	74.5%	75.3%	75.8%	76.4%	77.3%
LC / Meso - B/A	10.19	11.37	13.20	14.07	14.06	14.40
Asbestosis (total) - G	2	2	2	3	4	5
Total = B+C+D+(A+F)+G	743	934	1,243	1,486	1,691	2,038

## Bangladesh: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



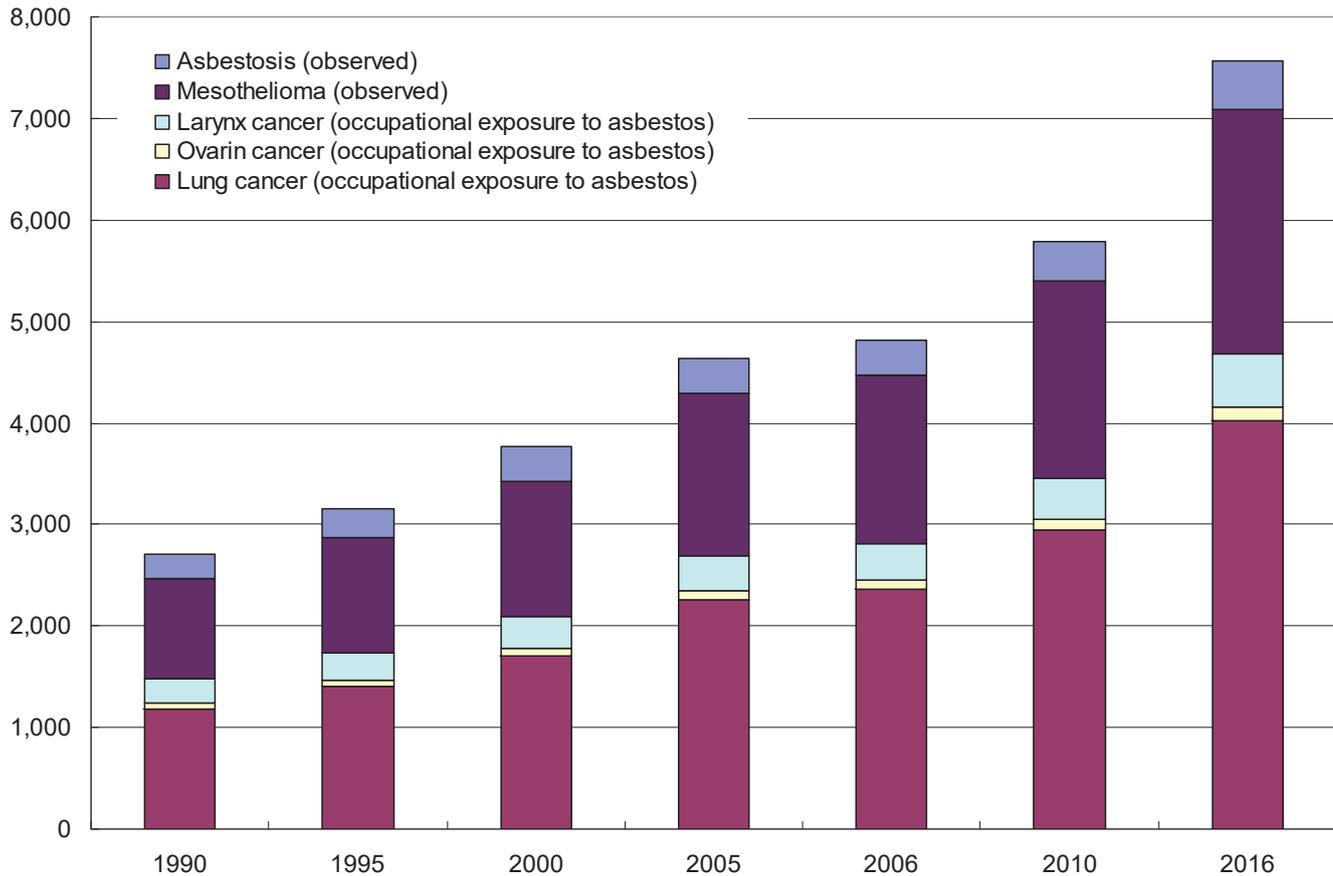
## Bangladesh: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	634	718	795	798	1,000	1,525
Mesothelioma (occup) - A	104	113	119	122	128	137
Lung Cancer (occup) - B	459	531	606	611	809	1,319
Ovarin Cancer (occup) - C	11	11	8	6	6	5
Larynx Cancer (occup) - D	40	43	40	36	35	37
Asbestosis (occup) - E	19	21	22	22	23	27
Mesothelioma (total) - A+F	129	142	151	159	168	183
Mesothelioma (non-occup) - F	26	29	33	37	40	46
% of occupational - A/(A+F)	80.2%	79.6%	78.3%	77.0%	76.0%	74.7%
LC / Meso - B/A	4.42	4.70	5.11	4.99	6.34	9.64
Asbestosis (total) - G	19	21	22	22	23	27
Total = B+C+D+(A+F)+G	659	747	828	834	1,041	1,572

## India: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



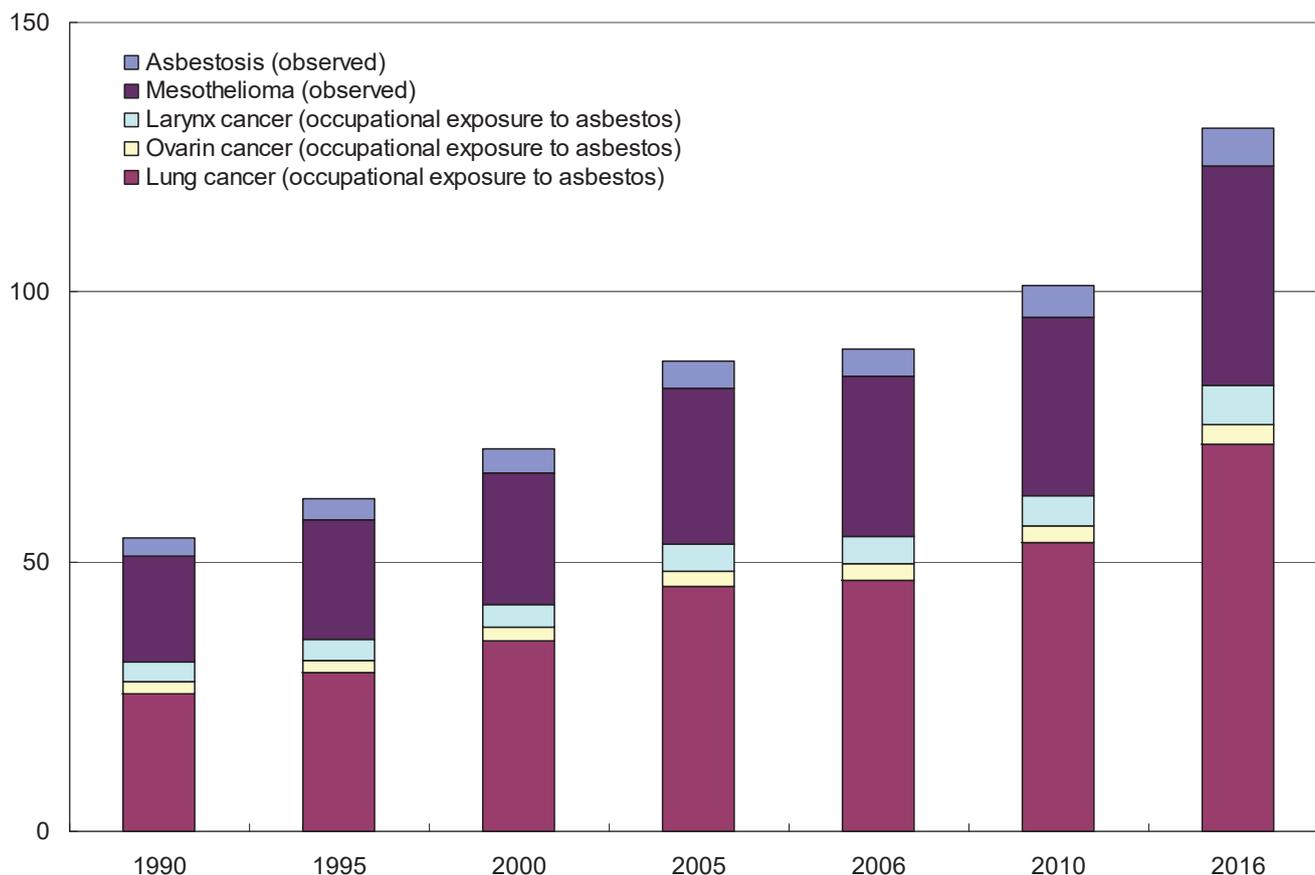
## India: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	2,486	2,905	3,483	4,308	5,413	7,136
Mesothelioma (occup) - A	758	875	1,049	1,276	1,567	1,976
Lung Cancer (occup) - B	1,188	1,409	1,710	2,264	2,942	4,018
Ovarin Cancer (occup) - C	57	62	71	87	109	144
Larynx Cancer (occup) - D	235	269	308	343	404	517
Asbestosis (occup) - E	248	292	345	337	391	482
Mesothelioma (total) - A+F	982	1,129	1,340	1,604	1,938	2,405
Mesothelioma (non-occup) - F	224	254	291	327	371	429
% of occupational - A/(A+F)	77.2%	77.5%	78.3%	79.6%	80.8%	82.2%
LC / Meso - B/A	1.57	1.61	1.63	1.77	1.88	2.03
Asbestosis (total) - G	248	292	345	337	391	482
Total = B+C+D+(A+F)+G	2,710	3,159	3,774	4,635	5,784	7,565

## Nepal: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



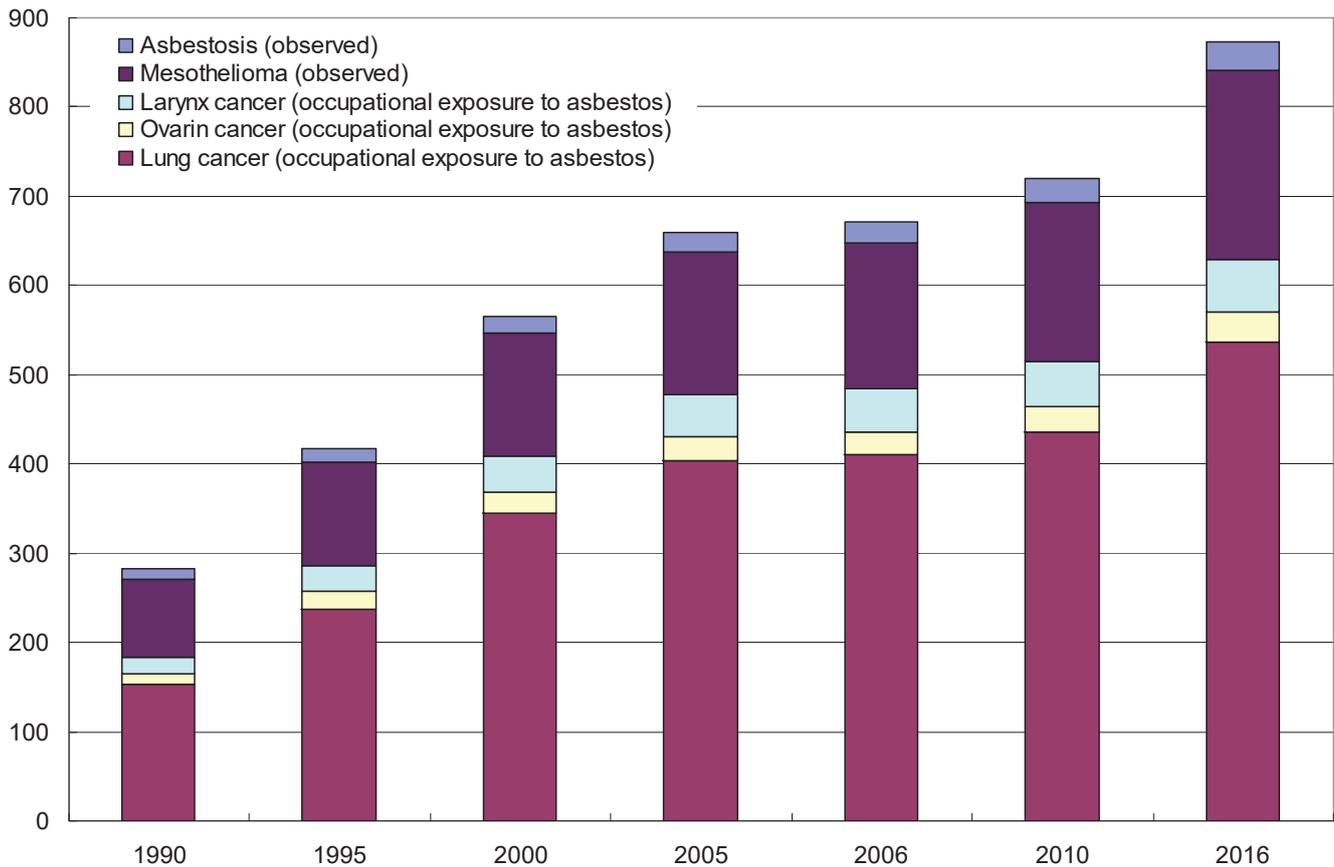
## Nepal: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	50	57	65	81	94	123
Mesothelioma (occup) - A	15	17	19	23	27	33
Lung Cancer (occup) - B	26	29	35	45	54	72
Ovarin Cancer (occup) - C	2	2	2	3	3	4
Larynx Cancer (occup) - D	4	4	4	5	6	7
Asbestosis (occup) - E	3	4	4	5	6	7
Mesothelioma (total) - A+F	20	22	24	29	33	41
Mesothelioma (non-occup) - F	4	5	6	6	7	8
% of occupational - A/(A+F)	77.5%	77.1%	77.2%	78.8%	79.9%	80.8%
LC / Meso - B/A	1.67	1.74	1.89	1.98	2.02	2.18
Asbestosis (total) - G	3	4	4	5	6	7
Total = B+C+D+(A+F)+G	55	62	71	87	101	130

## Pakistan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



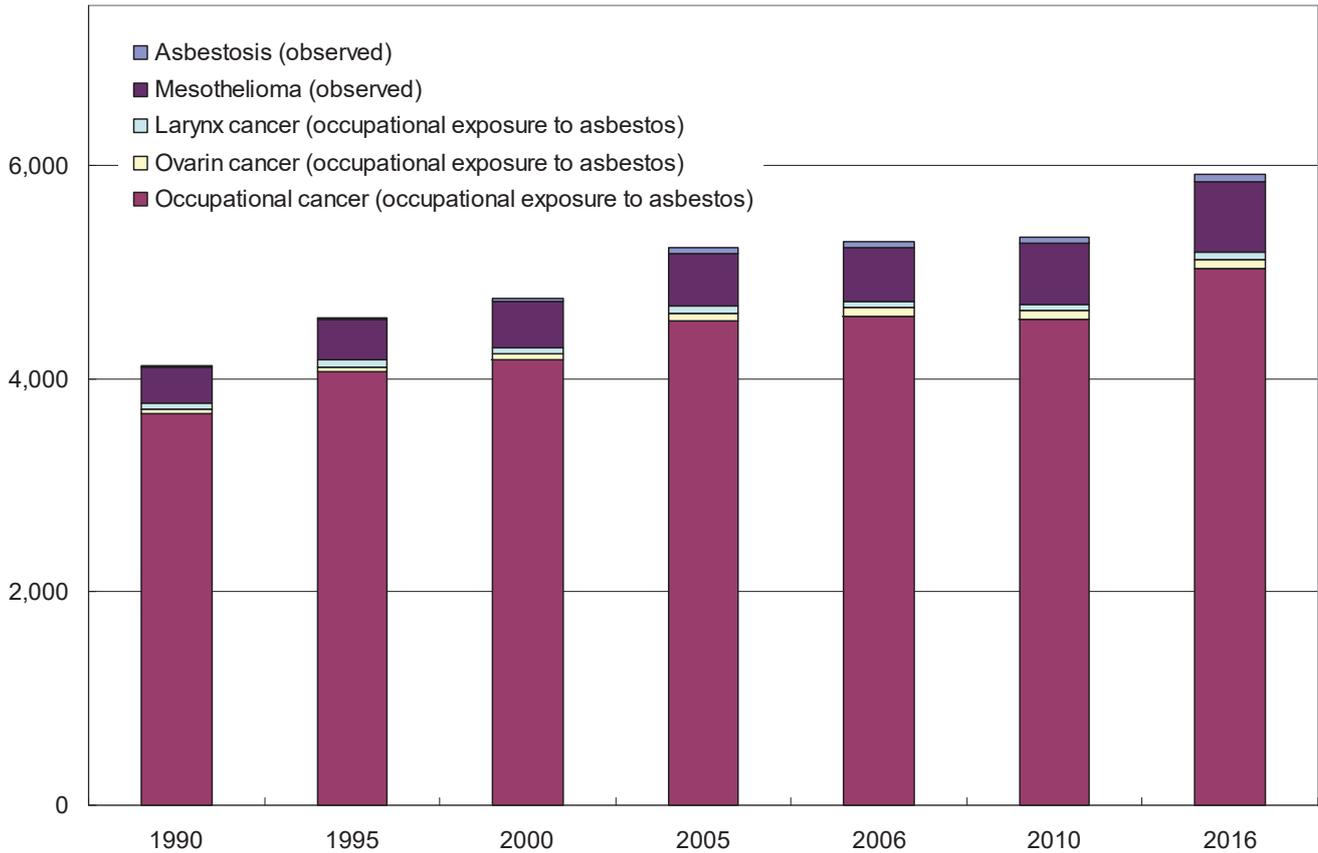
## Pakistan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)

Deaths	1990	1995	2000	2005	2010	2016
Occupational Asbestos Cancer	259	388	531	620	674	819
Mesothelioma (occup) - A	63	87	103	119	132	158
Lung Cancer (occup) - B	154	236	345	404	436	537
Ovarin Cancer (occup) - C	12	20	23	26	28	32
Larynx Cancer (occup) - D	18	29	41	48	52	60
Asbestosis (occup) - E	12	16	19	23	26	31
Mesothelioma (total) - A+F	87	116	137	159	178	212
Mesothelioma (non-occup) - F	24	29	34	39	45	54
% of occupational - A/(A+F)	72.0%	74.7%	75.2%	75.2%	74.5%	74.6%
LC / Meso - B/A	2.44	2.73	3.35	3.38	3.30	3.40
Asbestosis (total) - G	12	16	19	23	26	31
Total = B+C+D+(A+F)+G	283	418	565	659	719	873

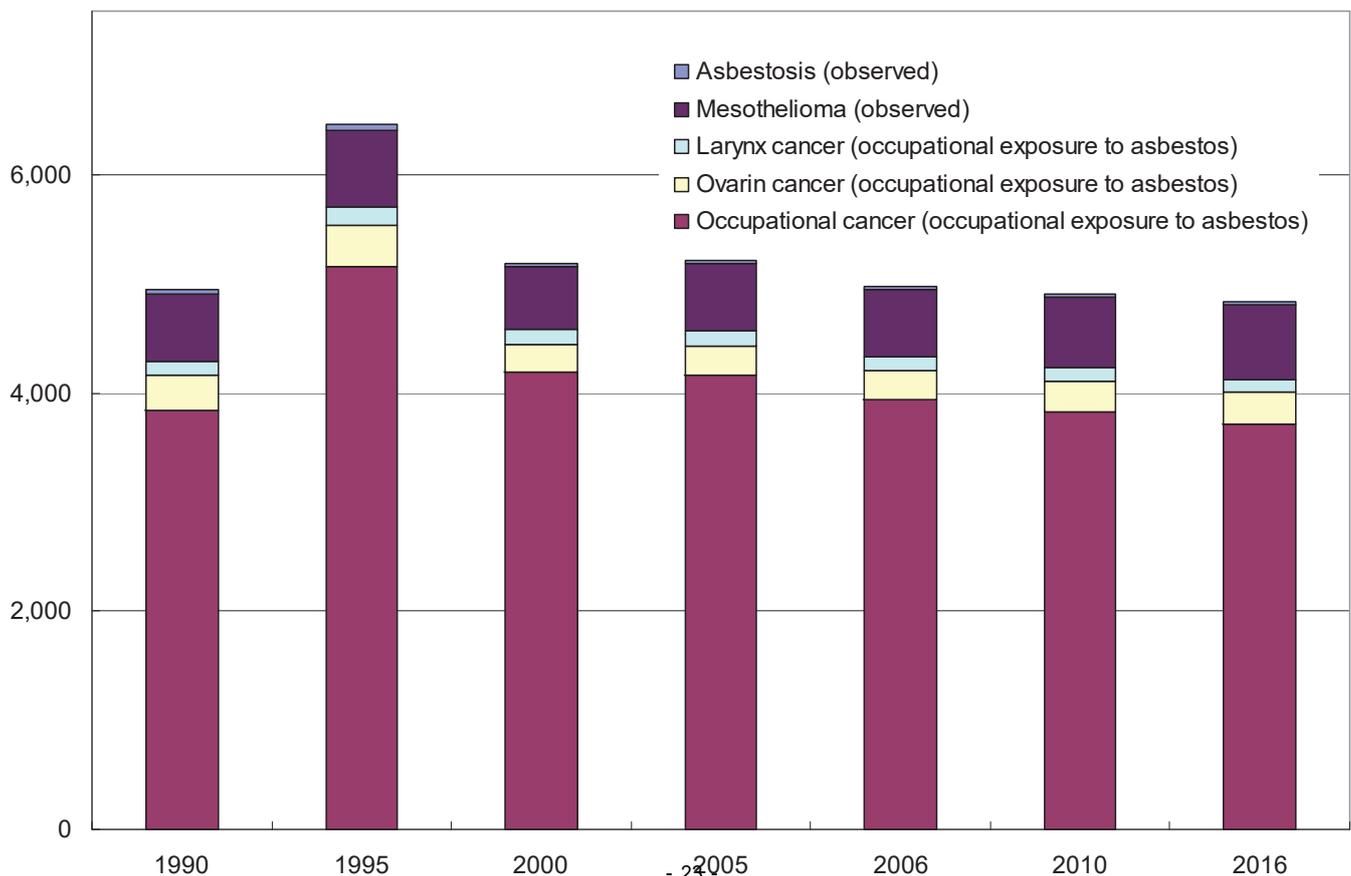
## Canada: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



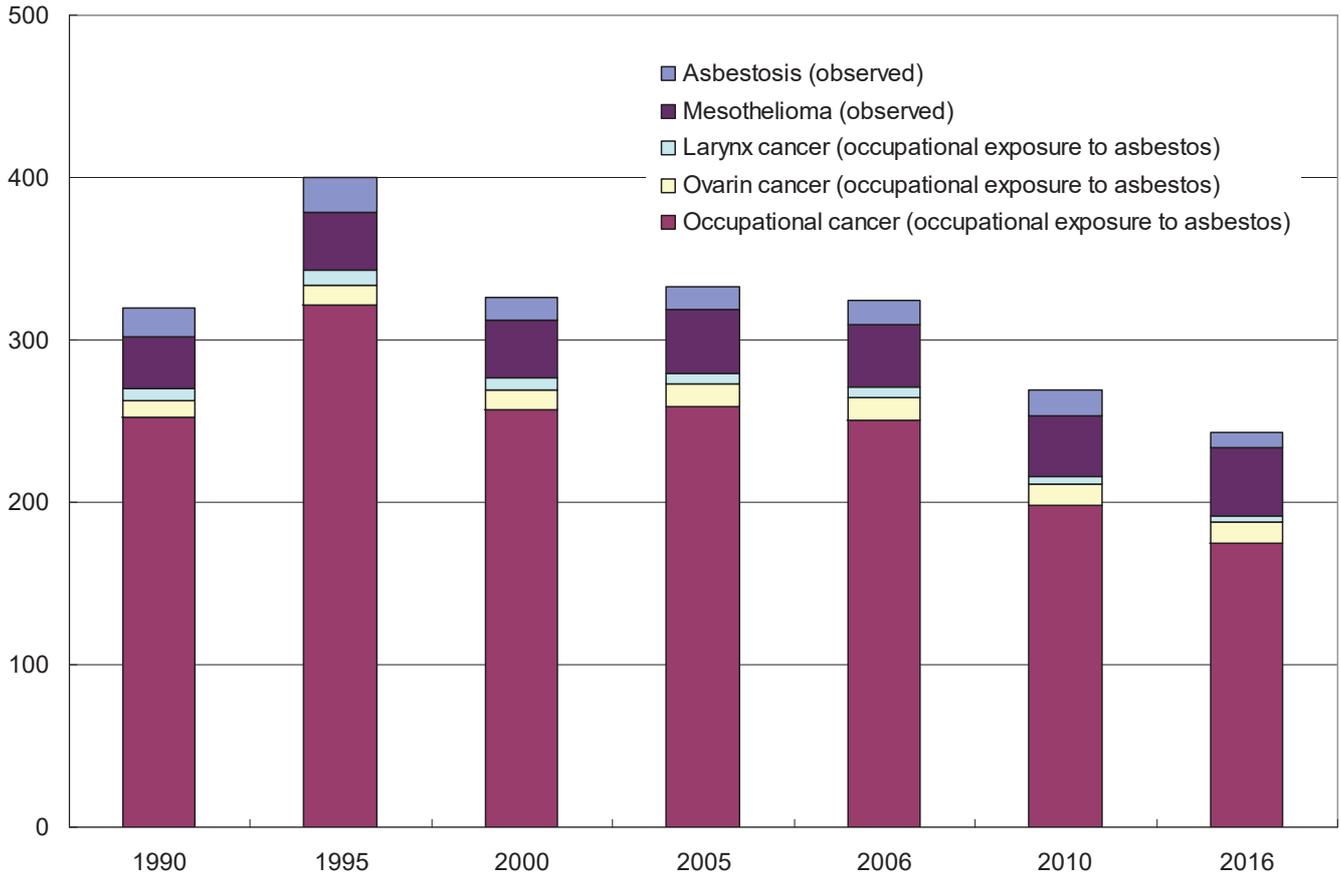
## Russia: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



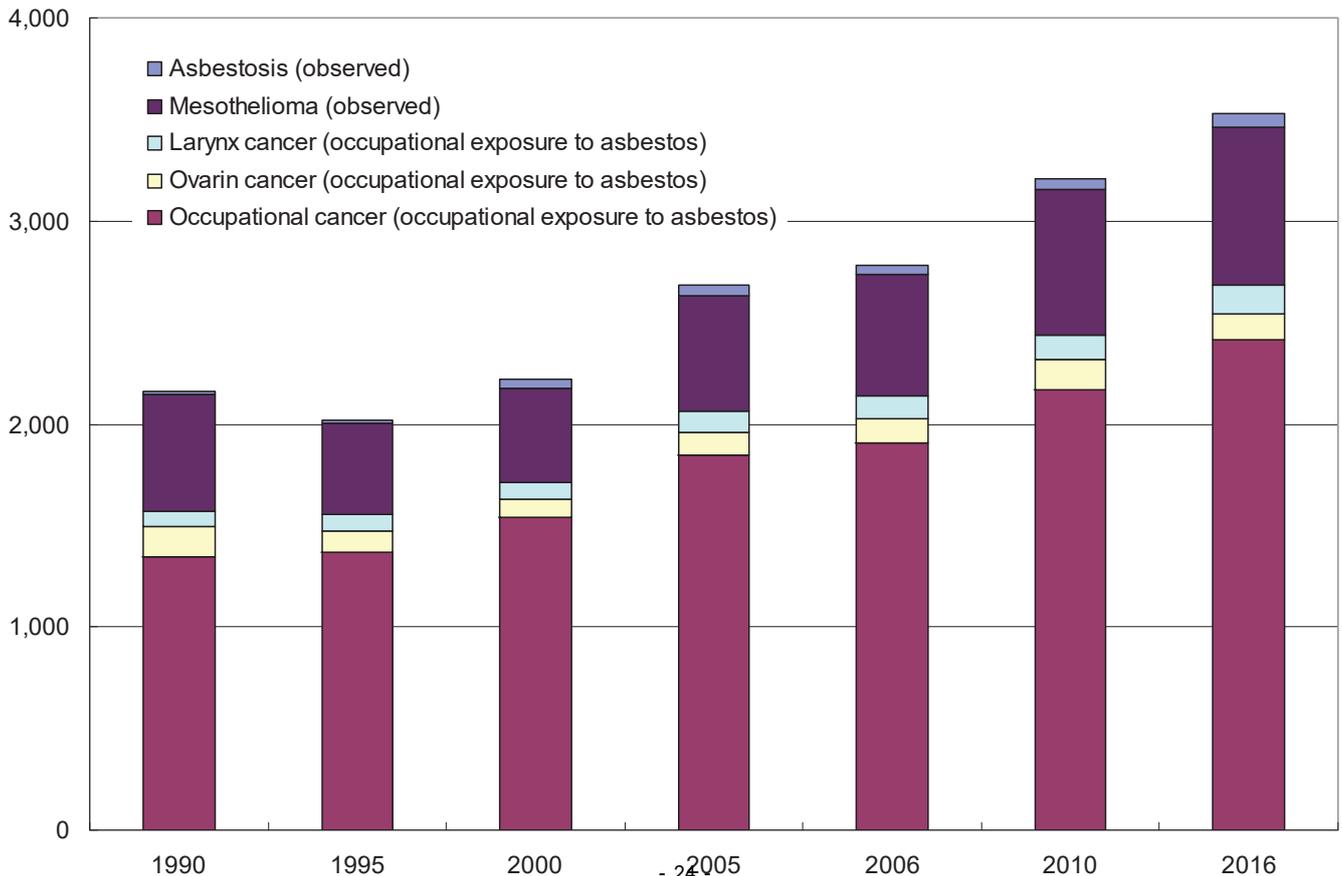
## Kazakhstan: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



## Brazil: GBD2016 (published in 2017) Estimates of ARDs Deaths

<http://vizhub.healthdata.org/gbd-compare/> (Observed)



# Estimation of the global burden of mesothelioma deaths from incomplete national mortality data

Published on  
September 2,  
2017

Odgerel Chimed-Ochir,<sup>1</sup> Ken Takahashi,<sup>1,2</sup> Tom Sorahan,<sup>3</sup> Tim Driscoll,<sup>4</sup> Christina Fitzmaurice,<sup>5</sup> Makoto Yoko-o,<sup>1</sup> Kittisak Sawanyawisuth,<sup>6</sup> Sugio Furuya,<sup>7</sup> Fumihiko Tanaka,<sup>8</sup> Seichi Horie,<sup>9</sup> Nico van Zandwijk,<sup>2</sup> Jukka Takala<sup>10</sup>

**Table 2** Numbers of annual mesothelioma deaths by status of countries for three extrapolation methods

Extrapolation method	Status of countries (No. of countries)	Mesothelioma deaths*						
		Men		Women		Total		Men %
		N	%	N	%	N	%	
Asbestos adjusted	Countries used for reference rates (59)	11 697	38.9	3314	39.7	15 011	39.1	77.9
	Estimated for (171)	18 338	61.1	5039	60.3	23 377	60.9	78.4
	Countries with poor quality data (45)	1655	5.5	507	6.1	2162	5.6	76.5
	Countries with no reported data (126)	16 683	55.6	4532	54.3	21 215	55.3	78.6
	Total (230)	30 035	100.0	8353	100.0	38 388	100.0	78.2
Continent adjusted	Countries used for reference rates (59)	11 697	41.4	3314	41.2	15 011	41.4	77.9
	Estimated for (171)	16 523	58.6	4724	58.8	21 247	58.6	77.8
	Countries with poor quality data (45)	1925	6.8	539	6.7	2464	6.8	78.1
	Countries with no reported data (126)	14 598	51.7	4185	52.1	18 783	51.8	77.7
	Total (230)	28 220	100.0	8038	100.0	36 258	100.0	77.8
Employment adjusted	Countries used for reference rates (59)	11 697	39.7	3314	41.5	15 011	40.1	77.9
	Estimated for (171)	17 756	60.3	4688	58.5	22 444	59.9	79.1
	Countries with poor quality data (45)	2191	7.4	642	8.0	2833	7.6	77.3
	Countries with no reported data (126)	15 565	52.8	4046	50.4	19 611	52.3	79.4
	Total (230)	29 453	100.0	8002	100.0	37 455	100.0	78.6

<http://oem.bmj.com/content/early/2017/09/02/oemed-2017-104298>

- Estimation of annual mesothelioma deaths in countries without high quality data by using high quality data
- 104 countries had reported data to WHO during 1994-2014 and 126 had no reported data.
- 45 countries were excluded because they had (1) <0.5 deaths/million/year, (2) <2 reported years or (3) <10 total reported deaths.
- Reference rates (sets of mesothelioma mortality rates specified by age and gender) were calculated from reported data for 3 most recent years of remaining 59 countries with high quality data in terms of (1) historical level of asbestos use (per capita and cumulative, stratified into High, Middle, Low and No use groups), (2) continental region and (3) percentage of workforce in industrial sector (grouped into High, Middle and Low groups) as selected attributers.
- Estimations were made by 3 extrapolation methods – adjusted by (1) asbestos use, (2) continent and (3) employment in industrial sector.

## Meso deaths by status of countries for 3 extrapolation methods

Extrapolation method	Statute of countries (no. of countries)	Mesothelioma deaths		
		Number	%	Men %
Asbestos adjusted	Countries used for reference rates (59)	15,011	39.1	77.9
	Estimated for (171)	23,377	60.9	78.4
	Estimated with poor quality data (45)	2,167	5.6	76.5
	Estimated with no reported data (126)	21,215	55.3	78.6
	<b>Total (230)</b>	<b>38,388</b>	<b>100.0</b>	<b>78.2</b>
Continent adjusted	Countries used for reference rates (59)	15,011	41.4	77.9
	Estimated for (171)	21,247	58.6	77.8
	Estimated with poor quality data (45)	2,464	6.8	78.1
	Estimated with no reported data (126)	18,783	51.8	77.7
	<b>Total (230)</b>	<b>36,258</b>	<b>100.0</b>	<b>77.8</b>
Employment adjusted	Countries used for reference rates (59)	15,011	40.1	77.9
	Estimated for (171)	22,444	59.9	79.1
	Estimated with poor quality data (45)	2,833	7.6	77.3
	Estimated with no reported data (126)	19,611	52.3	79.4
	<b>Total (230)</b>	<b>37,455</b>	<b>100.0</b>	<b>78.6</b>

GBMeso: <http://oem.bmj.com/content/early/2017/09/02/oemed-2017-104298>

## Comparison of Meso Estimates: GBMeso vs GBD2016 -1

GBMeso						GBD2016	
Ra nk	Country	A	C	E	Average (for 3 yrs)	Ra nk	Meso Deaths In 2011
Countries used for ref rates (59)					15,011		17,364
3	USA	H	America	H	2,611 (2011-13)	1	2,911
4	UK	H	Europe	H	2,405 (2011-13)	2	2,547
5	Italy	H	Europe	H	1,423 (2011-13)	5	1,635
6	Germany	H	Europe	H	1,413 (2011-13)	6	1,628
7	Japan	H	Asia	H	1,357 (2011-13)	8	1,345
10	France	H	Europe	H	972 (2009-11)	7	1,471
11	Australia	H	Oceania	M	609 (2009-11)	10	688
14	Netherlands	H	Europe	M	493 (2011-13)	13	575
15	Canada	H	America	M	436 (2009-11)	12	578
16	Spain	H	Europe	H	412 (2011-13)	14	486
18	Turkey	H	Asia	H	363 (2011-13)	15	470
	Other 48				2,517		3,030

GBD2016: [https://vizhub.healthdata.org/gbd-compare/%20\(Observed\)](https://vizhub.healthdata.org/gbd-compare/%20(Observed))  
 GBMeso: <http://oem.bmj.com/content/early/2017/09/02/oemed-2017-104298>

## Comparison of Meso Estimates: GBMeso vs GBD2016 -2

GBMeso								GBD2016	
Ra nk	Country	A	C	E	Asbestos adjusted	Continent adjusted	Employment adjusted	Ra nk	Meso Deaths In 2011
Estimated with poor quality data (45)					2,162	2,464	2,833		1,359
9	Brazil	H	America	H	1,183	779	1,143	9	724
	Other 44				979	1,685	1,690		634
Estimated with no reported data (126)					21,215	18,783	19,611		9,464
1	China	H	Asia	M	10,459	6,456	9,549	3	2,477
2	India	H	Asia	M	5,940	3,732	5,411	4	2,011
8	Russia	H	Europe	H	1,292	1,645	1,241	11	648
12	Indonesia	M	Asia	L	548	700	184	16	385
13	Thailand	H	Asia	L	539	330	83	22	228
17	Nigeria	H	Africa	L	410	472	73	42	68
19	Iran	H	Asia	H	361	221	350	17	342
20	Pakistan	M	Asia	M	337	431	646	27	182
	Other 118				1,329	4,796	2,029		3,124
Total (230)					38,388	36,258	37,455		27,043

GBD2016: <https://vizhub.healthdata.org/gbd-compare/%20> (Observed)  
 GBMeso: <http://oem.bmj.com/content/early/2017/09/02/oemed-2017-104298>

## Comparison of Meso Estimates: GBMeso vs GBD2016

GBMeso								GBD2016	
Ra nk	Country	A	C	E	Asbestos adjusted	Continent adjusted	Employment adjusted	Ra nk	Meso Deaths In 2011
1	China	H	Asia	M	10,459	6,456	9,549	3	2,477
2	India	H	Asia	M	5,940	3,732	5,411	4	2,011
12	Indonesia	M	Asia	L	548	700	184	16	385
13	Thailand	H	Asia	L	539	330	83	22	228
20	Pakistan	M	Asia	M	337	431	646	27	182
23	Taiwan	H	Asia	N	230	135	24	52	50
26	Philippines	M	Asia	L	179	230	60	31	119
30	Malaysia	H	Asia	H	139	90	136	66	34
32	Bangladesh	N	Asia	L	104	408	104	28	168
40	Korea	H	Asia	H	86	86	86	35	109
42	Vietnam	N	Asia	L	76	298	84	30	144
46	SriLanka	M	Asia	H	67	82	129	45	66
50	Myanmar	L	Asia	L	55	149	41	25	191
79	Nepal	N	Asia	L	17	71	19	64	34
102	Cambodia	N	Asia	L	8	30	7	80	20
164	Laos	N	Asia	L	0	10	1	119	8