

Appendix E-1 Derivation of the RTI Values

Calculating Values of RTI/RTD (Fig. 1-A)

In order to calculate the age-standardized rate of RTIs ($\widehat{\text{RTIrate}}$), we assumed that the rate of RTIs is proportional to the age-standardized rate of RTDs ($\widehat{\text{RTDrate}}$), with a proportionality constant equal to the ratio of injuries to deaths:

$$\widehat{\text{RTIrate}} = \widehat{\text{RTDrate}} \times \frac{\text{RTI}}{\text{RTD}} \quad \text{A.1)}$$

The value of RTI/RTD for an individual country is likely highly complex, affected by its economy, health, and transit infrastructure. We chose to capture this complexity and variability by estimating a range of values for RTI/RTD that could be applied to all countries in this study to provide a range for the femoral fracture incidence. We estimated the range of RTI/RTD on the basis of published values from ten studies^{5,10,16-20,24,25,27}.

First, we examined the World Report on Road Traffic Injury Prevention (2004)²⁴, which presents the results of multiple road traffic reports and yielded a value of 15 for RTI/RTD. Second, the World Report and Murray et al. also estimated that 1.2 million people die and twenty to fifty million people are disabled and/or injured annually in RTCs worldwide²⁷. We used these values to calculate RTI/RTD values of 16.7 and 41.7, with a median of 29.2.

Third, we used total “long-term” femoral fracture incidence rates and RTD rates according to sex and geographic region in the 1990 GBD Study¹⁶. According to that study, 50% of untreated femoral fractures are “long-term,” so we multiplied the published long-term femoral fracture incidence rate by 2 to yield the total age-standardized femoral fracture incidence rate ($\widehat{I_{\text{ffx}}\text{rate}}$). We used the GBD Study’s published proportions of RTIs that involve femoral fracture in each age group, $\frac{I_{\text{ffx}}}{\text{RTI}}(\text{age})$, to calculate the age-standardized $I_{\text{ffx}}/\text{RTI}$ for each country on the basis of the country’s population distribution. We calculated the population-weighted mean value of $I_{\text{ffx}}/\text{RTI}$ for the world, then used this to back-calculate RTI/RTD as follows:

$$\frac{\text{RTI}}{\text{RTD}} = \frac{\widehat{I_{\text{ffx}}\text{rate}}}{\widehat{\text{RTDrate}}} \bigg/ \frac{I_{\text{ffx}}}{\text{RTI}} \quad \text{A.2)}$$

The resulting RTI/RTD values for each individual geographic region and sex had a minimum of 2.1, a maximum of 11.5, and a median of 3.4.

Fourth, we directly compared the worldwide $\widehat{\text{RTIrate}}$ from the 1990 GBD Study¹⁶ with the worldwide $\widehat{\text{RTDrate}}$ from the WHO²⁵. This yielded RTI/RTD values with a minimum of 13.4, a maximum of 33.4, and a median of 23.4.

Fifth, Gosselin et al.⁵ reported RTI/RTD values ranging from ten to fifty, with a median of thirty.

Sixth, Mock and Cherian¹⁰ reported RTD rates for LMICs and HICs, short and long-term femoral fracture rates, and the proportion of RTIs involving short and long-term femoral fractures. We entered these values into equation A.2, which yielded RTI/RTD values for LMICs and HICs that had a minimum of 16.5, a maximum of 26.8, and a median of 21.4.

Seventh, Kobusingye et al.¹⁹ reported the number of fatal, disabling, and recovered injuries secondary to RTCs in rural and urban regions of Uganda. We calculated the ratio of nonfatal (disabling and recovered) to fatal injuries to yield RTI/RTD values with a minimum of 4.8, a maximum of 15.2, and a median of 10.0.

Lastly, Fakhry et al. and Feldstein et al. reported femoral fracture incidence rates for the United States (13.3 and 18 per 100,000 per year, respectively)^{17,18} and Weiss et al. reported the femoral fracture incidence rate for Sweden²⁰. We used the 1990 GBD estimates of $I_{\text{ffx}}/\text{RTI}$ and the World Bank population demographics to calculate a population-weighted mean value of $I_{\text{ffx}}/\text{RTI}$ for the United States and Sweden. We entered these country-specific values of $I_{\text{ffx}}/\text{RTI}$ and the country-specific $\widehat{\text{RTDrate}}$ from the WHO into equation A.2, which yielded RTI/RTD values of 14.1 from Fakhry et al., 19.0 from Feldstein et al., and 25.4 from Weiss et al.

Analysis of these ten studies provided six ranges and four single values of RTI/RTD. We treated the single values as both the minimum and maximum values for those studies. We separately calculated the interquartile ranges of all of the minimum values and of all of the maximum values from the ten studies. The lower bound of the interquartile range of the minimum values and the upper bound of the interquartile range of the maximum values yielded RTI/RTD values of 10.8 and 31.4, which we used for the present study. Figure 2 displays the ranges and values from all ten studies that we examined, overlaid with the range that we used for our model of femoral fracture incidence secondary to RTCs.

Converting from Age-Standardized RTI Rates to Age-Group-Specific RTI Rates (Fig. 1-B)

In order to convert from age-standardized RTI rates to RTI rates for each age group, we first had to identify a model to which we would fit the RTI rates. The 1990 GBD Study presents femoral fracture incidence and incidence rates according to age group¹⁶. We made the assumption that, although the absolute incidence rates may have changed since 1990, the pattern of variability of femoral fracture incidence rates according to age group has not changed.

From the 1990 GBD study, we took the long-term femoral fracture incidence rate according to age group and sex for each geographic region ($I_{\text{ffx}}\text{rate}[\text{age group,sex,geographic region}]$). We combined male and female femoral fracture incidence rates for each geographic region by using the World Bank population data proportions of males and females in each region, and we calculated the femoral fracture incidence for the total population (males and females) according to age group ($I_{\text{ffx}}\text{rate}[\text{age group, geographic region}]$).

Next, for each age group, we calculated the RTI rate by dividing the $I_{\text{ffx}}\text{rate}$ by $I_{\text{ffx}}/\text{RTI}$, supplied by the 1990 GBD Study:

$$I_{\text{ffx}}\text{rate} / \left(\frac{I_{\text{ffx}}}{\text{RTI}} \right) = \text{RTIrate} \quad \text{A.3)}$$

This provided the age-group-specific RTI rates according to geographic region, but from 1990. We assumed that the current pattern of RTI rate variability among age groups is the same as that from 1990 (i.e., the ratio of RTI rates between two age groups is preserved). With this assumption, for each geographic region, we calculated the ratio of the RTI rate for each age group to the RTI rate for age group 1 (age, zero to four years) with use of the following equation:

$$r_i/r_1 = \text{RTIrate}(\text{age group } i)/\text{RTIrate}(\text{age group } 1) \quad \text{A.4)}$$

We then aimed to back-calculate age-group-specific RTI rates with use of each county's age-standardized RTI rate ($\widehat{\text{RTIrate}}$). The age-standardized RTI rate from the WHO is calculated with use of the following equation, where r_i is the RTI rate for age group i and n_i is the population in age group i ³¹:

$$\widehat{\text{RTIrate}} = \sum_i r_i \left(\frac{n_i}{\sum_i n_i} \right) \quad \text{A.5)}$$

This formula can be rearranged algebraically as follows, where r_1 is the RTI rate for age group 1 and r_i/r_1 is the ratio of the RTI rate for a given age group i to the RTI rate for age group 1:

$$\widehat{\text{RTIrate}} = r_1 * \sum_i \left(r_i/r_1 \right) \left(\frac{n_i}{\sum_i n_i} \right) \quad \text{A.6)}$$

$$r_1 = \frac{\widehat{\text{RTIrate}}}{\sum_i \left(r_i/r_1 \right) \left(\frac{n_i}{\sum_i n_i} \right)} \quad \text{A.7)}$$

We then used equation A.7 to calculate r_1 for each country, using the $\widehat{\text{RTIrate}}$ for each country from equation 1.1, the r_i/r_1 ratios calculated according to geographic region from equation A.4, and the population distributions from the 2011 World Bank demographic data. With r_1 now calculated for each country, we back-calculated the RTI rates for the other age groups with use the formula $r_i = r_1 \times (r_i/r_1)$, with the r_i/r_1 ratios calculated with equation A.4. This yielded age-group-specific RTI rates for each country. ■

TABLE E-1 Annual Estimated Total Femoral Fracture Incidence According to Income Group						
Income Group	Annual Estimated Total Femoral Fracture Incidence					
	Low Estimate					Total
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	
Low	9497	67,496	44,459	8787	10,199	140,439
Lower middle	22,533	130,379	116,917	36,637	82,708	389,174
Upper middle	10,021	80,273	143,383	62,299	87,117	383,093
Low and middle	42,052	278,148	304,759	107,723	180,025	912,706
High	1639	9870	36,515	11,746	30,323	90,093
World	43,691	288,018	341,274	119,469	210,348	1,002,799

TABLE E-1 (continued)					
Annual Estimated Total Femoral Fracture Incidence					
High Estimate					
0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
27,504	195,471	128,755	25,448	29,537	406,715
65,257	377,582	338,596	106,101	239,526	1,127,062
29,022	232,473	415,242	180,421	252,294	1,109,452
121,783	805,527	882,593	311,970	521,357	2,643,230
4746	28,584	105,748	34,017	87,817	260,913
126,529	834,111	988,341	345,987	609,175	2,904,142

TABLE E-2 Annual Estimated Total Femoral Fracture Incidence According to Country

Annual Estimated Total Femoral Fracture Incidence												
Country	Low Estimate						High Estimate					
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Low income countries												
Afghanistan	416	3344	2833	475	412	7479	1205	9683	8204	1376	1193	21,660
Bangladesh	1827	5457	6229	1502	1986	17,000	5290	15,805	18,039	4349	5751	49,234
Benin	85	763	431	80	84	1442	245	2210	1247	230	244	4177
Burkina Faso	218	1918	1062	170	165	3533	632	5554	3075	493	478	10,231
Burundi	116	1125	797	145	136	2320	337	3259	2308	421	392	6718
Cambodia	239	667	751	195	228	2079	692	1932	2175	564	660	6022
Central African Republic	58	574	350	66	85	1133	167	1663	1012	191	246	3280
Chad	155	1380	730	135	143	2544	450	3998	2115	391	414	7368
Comoros	5	44	26	5	4	85	14	128	76	15	13	246
Congo, Dem. Rep.	1015	9214	4744	814	873	16,660	2940	26,683	13,740	2358	2529	48,249
Eritrea	42	368	242	32	38	722	121	1067	702	93	110	2092
Ethiopia	738	8005	4578	856	981	15,159	2138	23,183	13,259	2480	2841	43,902
Gambia, The	16	153	87	14	12	283	47	444	253	41	36	821
Guinea	126	1144	653	129	139	2191	364	3314	1891	372	403	6345
Guinea-Bissau	16	152	91	19	20	299	48	441	265	55	58	866
Haiti	19	210	190	47	61	527	54	609	550	135	178	1527
Kenya	464	4221	2573	419	429	8106	1343	12,225	7451	1214	1242	23,475
Korea, Dem. Rep.	169	528	754	279	539	2268	488	1528	2183	808	1560	6567
Kyrgyz Republic	26	221	339	85	70	742	77	640	982	246	202	2148
Liberia	52	460	265	49	48	873	149	1333	766	140	139	2528
Madagascar	172	1688	935	185	186	3167	499	4890	2707	536	540	9172
Malawi	154	1343	710	117	152	2476	446	3889	2057	338	440	7172
Mali	219	1876	982	151	149	3376	634	5433	2844	437	431	9778
Mauritania	31	304	195	38	34	602	91	880	566	109	99	1744
Mozambique	272	2602	1396	262	305	4838	788	7536	4043	759	884	14,011
Myanmar	491	1428	2019	656	763	5356	1421	4135	5846	1901	2209	15,512
Nepal	432	1246	1160	271	375	3483	1250	3609	3358	785	1085	10,087
Niger	267	2252	1042	218	189	3968	775	6521	3018	631	547	11,492
Rwanda	159	1348	831	140	146	2623	460	3903	2406	404	423	7596
Sierra Leone	121	1120	651	129	96	2116	352	3242	1885	372	277	6129
Somalia	74	643	346	70	65	1198	214	1863	1003	202	190	3470
Tajikistan	8	77	87	18	15	206	24	224	253	53	42	596
Tanzania	602	5212	2882	496	601	9793	1744	15,095	8346	1436	1740	28,361
Togo	50	515	327	60	67	1019	146	1490	946	172	195	2951
Uganda	494	4278	2113	309	362	7557	1431	12,389	6120	895	1050	21,885
Zimbabwe	149	1615	1058	153	240	3215	430	4676	3064	445	695	9311
Lower middle income countries												
Albania	3	35	121	45	56	260	10	101	351	129	162	752
Armenia	5	47	93	41	50	236	16	135	270	117	145	683
Belize	3	38	36	9	10	96	9	110	104	25	28	277
Bhutan	9	25	32	7	10	84	26	73	93	21	30	244
Bolivia	45	502	443	115	158	1263	130	1455	1282	333	457	3657
Cameroon	202	1863	1175	215	254	3709	584	5395	3402	623	737	10,742
Cape Verde	2	26	21	5	5	59	6	76	61	13	16	172
Congo, Rep.	39	366	228	42	51	726	113	1060	660	123	148	2103
Cote d'Ivoire	408	4044	2385	480	583	7900	1182	11,712	6907	1391	1687	22,880
Djibouti	9	92	68	13	14	196	26	267	196	39	40	567
Egypt, Arab Rep.	260	2360	3166	810	876	7473	754	6835	9170	2347	2537	21,642
El Salvador	41	534	520	136	243	1473	119	1547	1505	392	703	4266
continued												

continued

TABLE E-2 (continued)

Country	Annual Estimated Total Femoral Fracture Incidence										
	Low Estimate						High Estimate				
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr
Fiji	3	6	8	3	3	22	7	18	22	8	9
Georgia	4	35	82	37	59	216	11	101	236	107	170
Ghana	195	1869	1238	246	290	3839	565	5412	3586	714	841
Guatemala	28	291	218	47	74	658	82	844	630	136	214
Guyana	3	57	48	15	15	139	10	165	139	44	45
Honduras	26	292	260	59	80	717	76	846	753	171	230
India	9926	54,889	44,870	19,368	62,049	191,103	28,746	158,961	129,945	56,091	179,696
Indonesia	3807	10,537	14,160	4391	5591	38,486	11,025	30,515	41,009	12,715	16,191
Iraq	1238	9974	9558	1554	1652	23,977	3585	28,884	27,681	4501	4785
Lao PDR	126	370	375	84	108	1063	364	1072	1086	243	314
Lesotho	10	117	80	12	19	238	30	338	230	35	54
Micronesia, Fed. Sts.	1	2	2	0	1	5	2	5	5	1	1
Moldova	4	31	160	76	91	362	12	90	464	220	263
Mongolia	90	195	300	78	80	743	262	565	868	224	232
Morocco	134	1298	1996	545	543	4516	389	3760	5780	1578	1572
Nicaragua	21	242	233	57	70	623	61	700	676	165	203
Nigeria	1730	15,463	8947	1689	1985	29,813	5009	44,781	25,910	4892	5749
Pakistan	637	5856	7018	1434	1541	16,486	1844	16,960	20,324	4154	4462
Papua New Guinea	128	316	282	65	68	859	371	914	817	188	198
Paraguay	18	207	200	56	75	556	53	600	578	161	218
Philippines	959	2563	2483	673	738	7417	2777	7424	7192	1950	2136
Samoa	1	4	3	1	1	10	4	11	9	3	4
Sao Tome and Principe	2	17	10	2	2	32	5	48	30	5	6
Senegal	125	1155	669	106	107	2162	361	3345	1937	308	310
Solomon Islands	4	9	8	2	2	25	11	26	24	5	6
Sri Lanka	108	258	360	145	236	1107	311	749	1043	421	683
Sudan	545	5429	3330	672	761	10,736	1577	15,724	9643	1946	2203
Swaziland	9	102	68	11	13	204	27	296	196	32	39
Syrian Arab Republic	78	775	842	183	175	2052	225	2244	2437	530	506
Timor-Leste	22	50	34	8	10	123	62	146	98	22	28
Tonga	0	1	1	0	0	4	1	4	3	1	1
Ukraine	56	392	2297	1123	1771	5639	161	1136	6652	3253	5128
Uzbekistan	79	756	1153	280	229	2497	229	2191	3338	810	663
Vanuatu	2	4	4	1	1	12	5	12	11	3	3
Vietnam	804	2092	3428	1097	1330	8750	2328	6057	9927	3177	3852
Yemen, Rep.	422	3374	3160	487	476	7920	1222	9772	9153	1411	1380
Zambia	162	1416	747	110	151	2586	470	4102	2163	318	438
Upper middle income countries											
Algeria	126	1106	1969	438	411	4050	364	3203	5703	1269	1190
Angola	495	4652	2337	418	400	8302	1435	13,473	6767	1209	1159
Argentina	63	730	904	339	682	2718	182	2114	2619	982	1974
Azerbaijan	8	59	141	50	40	299	24	170	409	146	116
Belarus	14	103	575	284	387	1364	41	300	1665	823	1122
Bosnia and Herzegovina	1	8	40	20	29	98	2	24	116	59	83
Botswana	14	149	123	25	27	338	39	432	355	72	79
Brazil	650	8706	10,778	3921	5321	29,376	1883	25,214	31,212	11,357	15,409
Bulgaria	6	40	227	113	218	603	16	116	657	327	631
Chile	31	383	535	236	354	1538	90	1109	1549	683	1024

continued

TABLE E-2 (continued)

Country	Annual Estimated Total Femoral Fracture Incidence										
	Low Estimate						High Estimate				
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr
China	4422	30,112	68,581	37,280	55,336	195,731	12,806	87,206	198,612	107,965	160,255
Colombia	184	2127	2419	830	1010	6570	534	6159	7005	2403	2926
Costa Rica	12	150	196	71	88	516	34	434	566	206	254
Cuba	11	157	260	133	227	788	32	454	753	385	659
Dominican Republic	97	1103	1143	361	504	3209	282	3194	3311	1045	1459
Ecuador	43	501	536	162	233	1474	124	1450	1551	470	675
Gabon	12	132	94	20	23	282	35	384	273	59	68
Grenada	0	1	1	0	0	3	0	2	3	1	1
Iran, Islamic Rep.	737	6395	14,244	3111	3084	27,571	2135	18,520	41,251	9009	8932
Jamaica	6	83	85	30	46	250	18	239	246	88	133
Jordan	43	389	451	68	88	1038	124	1126	1305	197	254
Kazakhstan	70	479	934	317	315	2116	202	1387	2705	919	914
Latvia	3	21	127	60	110	321	9	62	367	174	318
Lebanon	29	318	527	155	181	1209	83	920	1528	448	524
Libya	35	293	457	95	94	974	101	849	1323	274	272
Lithuania	4	35	188	89	147	464	13	103	545	257	427
Macedonia, FYR	1	12	54	23	32	123	4	35	157	68	93
Malaysia	337	951	1052	367	422	3128	975	2753	3046	1063	1222
Maldives	6	17	25	6	8	60	16	49	71	16	22
Mauritius	3	44	47	18	20	132	9	127	137	53	57
Mexico	460	5351	6020	1918	2628	16,378	1332	15,497	17,435	5555	7610
Namibia	16	177	123	25	27	368	47	512	357	71	77
Panama	10	119	133	45	63	371	30	346	385	130	183
Peru	86	1013	1109	329	471	3008	250	2935	3212	952	1363
Romania	15	128	688	285	498	1614	44	369	1993	826	1442
Russian Federation	305	2065	11,833	5966	7689	27,858	884	5980	34,269	17,278	22,267
South Africa	503	5777	4955	1241	1344	13,820	1456	16,731	14,351	3595	3891
St. Lucia	1	6	8	3	4	21	2	18	24	8	10
St. Vincent and the Grenadines	0	2	2	1	1	6	0	6	7	2	3
Suriname	3	35	38	14	17	107	8	101	110	40	51
Thailand	780	2428	3855	1745	2577	11,386	2260	7033	11,165	5053	7464
Tunisia	50	452	882	247	280	1911	145	1309	2554	716	810
Turkey	156	1528	2481	717	743	5625	451	4425	7186	2077	2152
Turkmenistan	9	89	137	34	27	296	27	257	397	98	77
Uruguay	5	61	76	34	77	252	14	175	220	98	222
Venezuela, RB	158	1786	1993	655	836	5427	458	5171	5770	1896	2420
High income countries											
Australia	19	118	524	146	407	1215	55	343	1518	422	1180
Austria	6	43	227	72	224	572	17	126	656	208	648
Bahamas, The	1	13	19	8	9	50	3	37	55	23	27
Bahrain	3	24	68	15	6	115	8	69	196	42	17
Barbados	0	5	8	4	7	25	1	14	23	13	20
Belgium	14	88	399	131	419	1051	40	256	1157	378	1213
Brunei	4	11	17	5	4	42	13	32	49	15	13
Darussalam											
Canada	27	171	836	279	707	2019	77	495	2421	807	2047
Croatia	4	33	154	83	146	419	11	95	446	240	423
Cyprus	3	29	66	24	37	159	8	84	191	69	107
Czech Republic	7	45	272	123	218	665	19	130	787	357	633

continued

TABLE E-2 (continued)

Annual Estimated Total Femoral Fracture Incidence												
Country	Low Estimate						High Estimate					
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Denmark	4	28	118	37	123	310	12	82	341	106	356	898
Equatorial Guinea	10	88	55	16	10	179	28	255	160	47	30	519
Estonia	1	9	48	23	42	124	4	26	139	66	123	359
Finland	4	23	100	34	115	276	10	65	290	99	333	798
France	66	413	1723	536	1776	4513	192	1195	4990	1551	5143	13,071
Germany	42	300	1588	577	1901	4408	120	870	4600	1671	5504	12,765
Greece	15	92	525	153	538	1323	45	267	1519	442	1559	3832
Hungary	9	70	364	171	313	926	25	201	1055	496	905	2682
Iceland	0	2	8	2	5	17	1	5	22	6	15	49
Ireland	4	24	104	25	67	225	13	69	302	73	195	652
Israel	8	68	96	33	55	259	23	196	278	95	159	751
Italy	56	356	1944	614	2298	5267	162	1031	5629	1777	6654	15,254
Japan	56	387	2059	637	2936	6074	162	1122	5963	1844	8502	17,592
Korea, Rep.	325	1050	2008	1049	1682	6114	942	3042	5815	3037	4870	17,706
Kuwait	11	85	175	30	20	321	31	246	506	87	58	929
Luxembourg	1	4	18	5	14	42	2	12	53	16	41	123
Malta	0	1	4	1	4	10	0	2	12	4	10	28
Netherlands	8	57	240	79	233	617	23	166	695	230	674	1788
New Zealand	6	39	155	45	119	364	18	112	450	129	346	1055
Norway	3	20	86	24	77	211	9	59	249	71	224	610
Oman	8	63	129	18	14	232	22	183	372	51	42	671
Poland	37	291	1589	785	1126	3829	107	844	4603	2273	3262	11,089
Portugal	15	105	540	162	544	1365	43	303	1564	469	1575	3954
Qatar	4	30	149	26	6	215	11	87	432	74	18	622
Saudi Arabia	166	1352	2205	457	302	4483	482	3916	6387	1323	875	12,982
Singapore	13	49	84	46	63	254	36	142	242	133	182	736
Slovenia	2	13	71	39	63	187	5	37	206	112	182	542
Spain	45	259	1524	420	1371	3619	132	749	4414	1215	3970	10,480
Sweden	6	33	159	46	174	418	16	95	462	133	505	1211
Switzerland	4	27	139	43	134	347	11	78	402	125	388	1005
Trinidad and Tobago	3	33	56	23	28	143	9	96	163	66	80	414
United Arab Emirates	25	250	895	132	22	1323	72	725	2592	381	63	3833
United Kingdom	40	243	1133	329	1101	2847	115	705	3281	953	3190	8244
United States	556	3425	13,833	4243	10,862	32,918	1609	9919	40,062	12,287	31,456	95,333

TABLE E-3 Annual Estimated Femoral Fracture Incidence Rate per 100,000 People According to Income Group												
Income Group	Annual Estimated Femoral Fracture Incidence Rate (<i>per 100,000</i>)											
	Low Estimate						High Estimate					
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Low income countries	8.1	33.1	11.9	11.3	22.6	17.2	23.4	95.9	34.5	32.8	65.4	49.8
Lower middle income countries	8.0	25.0	9.7	11.3	44.1	15.5	23.2	72.3	28.2	32.8	127.6	44.8
Upper middle income countries	5.7	21.9	11.9	14.1	30.0	15.4	16.4	63.4	34.4	41.0	86.8	44.7
Low and middle income countries	7.3	25.4	11.0	12.8	34.4	15.7	21.1	73.7	31.7	37.1	99.6	45.5
High income countries	2.5	7.9	8.1	5.3	13.0	8.2	7.3	22.9	23.6	15.3	37.7	23.9
World	6.8	23.6	10.6	11.2	27.8	14.5	19.8	68.5	30.6	32.5	80.5	42.0

TABLE E-4 Annual Estimated Femoral Fracture Incidence Rate per 100,000 People According to Country

Annual Estimated Femoral Fracture Incidence Rate (per 100,000)												
Country	Low Estimate						High Estimate					
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Low income countries												
Afghanistan	6.7	32.9	19.0	17.7	31.1	21.2	19.3	95.2	55.0	51.3	90.0	61.3
Bangladesh	12.3	16.9	8.2	8.8	19.9	11.3	35.5	49.0	23.7	25.4	57.5	32.7
Benin	5.5	31.4	10.9	10.5	19.9	15.8	15.8	91.1	31.6	30.4	57.7	45.9
Burkina Faso	7.2	41.3	14.3	13.8	26.1	20.8	20.8	119.5	41.5	39.8	75.7	60.3
Burundi	9.6	55.3	19.2	18.4	35.0	27.0	27.8	160.1	55.6	53.4	101.4	78.3
Cambodia	15.8	21.8	10.5	11.3	25.6	14.5	45.8	63.3	30.5	32.7	74.2	42.1
Central African Republic	8.7	50.0	17.4	16.7	31.7	25.2	25.2	144.9	50.3	48.3	91.8	73.1
Chad	7.5	43.4	15.1	14.5	27.5	22.1	21.9	125.8	43.7	41.9	79.7	63.9
Comoros	3.9	22.6	7.8	7.5	14.3	11.3	11.4	65.4	22.7	21.8	41.4	32.6
Congo, Dem. Rep.	8.3	48.0	16.7	16.0	30.4	24.6	24.2	139.1	48.3	46.3	88.1	71.2
Eritrea	4.7	27.0	9.4	9.0	17.1	13.3	13.6	78.2	27.2	26.1	49.5	38.6
Ethiopia	6.1	34.9	12.1	11.6	22.1	17.9	17.5	101.0	35.1	33.7	64.0	51.8
Gambia, The	5.5	31.5	11.0	10.5	20.0	16.0	15.9	91.3	31.7	30.4	57.9	46.2
Guinea	7.4	42.6	14.8	14.2	27.0	21.4	21.4	123.3	42.8	41.1	78.2	62.1
Guinea-Bissau	6.7	38.7	13.4	12.9	24.5	19.3	19.5	112.0	38.9	37.3	71.0	55.9
Haiti	1.5	8.8	4.0	4.4	9.3	5.2	4.3	25.5	11.6	12.7	26.9	15.1
Kenya	6.8	39.0	13.6	13.0	24.7	19.5	19.6	113.0	39.2	37.7	71.6	56.4
Korea, Dem. Rep.	9.8	13.6	6.6	7.0	15.9	9.3	28.5	39.3	19.0	20.3	46.1	26.9
Kyrgyz Republic	4.3	21.2	12.3	11.5	20.1	13.5	12.5	61.5	35.6	33.2	58.1	39.0
Liberia	7.3	42.1	14.6	14.0	26.7	21.1	21.2	122.0	42.4	40.7	77.3	61.2
Madagascar	5.1	29.2	10.1	9.7	18.5	14.9	14.7	84.5	29.4	28.2	53.6	43.0
Malawi	5.5	31.6	11.0	10.5	20.0	16.1	15.9	91.6	31.8	30.5	58.1	46.6
Mali	7.3	42.0	14.6	14.0	26.6	21.3	21.1	121.6	42.2	40.5	77.1	61.7
Mauritania	5.9	34.3	11.9	11.4	21.7	17.0	17.2	99.2	34.5	33.1	62.9	49.2
Mozambique	6.9	39.5	13.7	13.2	25.0	20.2	19.9	114.4	39.8	38.1	72.5	58.5
Myanmar	12.3	17.0	8.2	8.8	19.9	11.1	35.6	49.2	23.7	25.4	57.7	32.1
Nepal	12.1	16.7	8.1	8.6	19.6	11.4	35.0	48.3	23.3	25.0	56.7	33.1
Niger	8.4	48.2	16.7	16.1	30.5	24.7	24.2	139.5	48.5	46.5	88.4	71.5
Rwanda	8.4	48.5	16.8	16.2	30.7	24.0	24.4	140.3	48.7	46.8	88.9	69.4
Sierra Leone	12.2	70.5	24.5	23.5	44.7	35.3	35.5	204.2	70.9	68.1	129.4	102.2
Somalia	4.3	24.9	8.6	8.3	15.8	12.5	12.5	72.0	25.0	24.0	45.6	36.3
Tajikistan	0.9	4.6	2.6	2.5	4.3	2.9	2.7	13.2	7.6	7.1	12.5	8.5
Tanzania	7.3	42.0	14.6	14.0	26.6	21.2	21.1	121.6	42.3	40.5	77.1	61.4
Togo	5.7	33.0	11.5	11.0	20.9	16.6	16.6	95.6	33.2	31.9	60.6	47.9
Uganda	7.4	42.6	14.8	14.2	27.0	21.9	21.4	123.4	42.9	41.1	78.2	63.4
Zimbabwe	8.7	49.8	17.3	16.6	31.6	25.2	25.1	144.3	50.1	48.1	91.5	73.0
Lower middle income countries												
Albania	1.6	6.7	8.1	7.9	13.1	8.1	4.7	19.4	23.4	23.0	37.8	23.4
Armenia	2.4	11.7	6.8	6.3	11.1	7.6	6.9	33.9	19.6	18.3	32.0	22.0
Belize	7.8	45.8	20.7	22.8	48.2	26.8	22.5	132.6	60.1	66.1	139.5	77.7
Bhutan	12.5	17.3	8.3	8.9	20.2	11.4	36.2	50.0	24.1	25.8	58.6	33.0
Bolivia	3.6	21.1	9.5	10.5	22.2	12.5	10.4	61.0	27.6	30.4	64.2	36.3
Cameroon	6.5	37.2	12.9	12.4	23.6	18.5	18.7	107.8	37.4	35.9	68.3	53.6
Cape Verde	4.2	24.2	8.4	8.1	15.4	11.9	12.2	70.2	24.4	23.4	44.5	34.3
Congo, Rep.	6.1	35.1	12.2	11.7	22.3	17.5	17.7	101.7	35.3	33.9	64.5	50.8
Cote d'Ivoire	13.5	77.5	26.9	25.8	49.1	39.2	39.0	224.5	78.0	74.8	142.3	113.5
Djibouti	7.7	44.1	15.3	14.7	28.0	21.6	22.2	127.8	44.4	42.6	81.0	62.6
Egypt, Arab Rep.	2.8	14.0	8.1	7.5	13.2	9.1	8.2	40.5	23.4	21.9	38.3	26.2
El Salvador	6.6	39.0	17.6	19.4	41.0	23.7	19.2	112.8	51.1	56.3	118.7	68.5
Fiji	2.8	3.9	1.9	2.0	4.5	2.6	8.1	11.2	5.4	5.8	13.1	7.4
continued												

continued

TABLE E-4 (continued)

Country	Annual Estimated Femoral Fracture Incidence Rate (per 100,000)											
	Low Estimate						High Estimate					
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Georgia	1.5	7.3	4.2	3.9	6.9	4.8	4.3	21.0	12.2	11.4	19.9	14.0
Ghana	5.4	31.1	10.8	10.4	19.7	15.4	15.6	89.9	31.2	30.0	57.0	44.5
Guatemala	1.3	7.5	3.4	3.7	7.9	4.5	3.7	21.6	9.8	10.8	22.8	12.9
Guyana	5.1	30.1	13.6	15.0	31.6	18.3	14.8	87.1	39.4	43.4	91.6	53.1
Honduras	2.7	15.7	7.1	7.8	16.5	9.2	7.7	45.4	20.5	22.6	47.7	26.8
India	7.7	22.0	7.5	11.5	66.0	15.4	22.2	63.6	21.7	33.2	191.3	44.6
Indonesia	17.5	24.1	11.6	12.5	28.3	15.9	50.6	69.8	33.7	36.1	81.8	46.0
Iraq	22.9	113.0	65.3	60.9	106.8	72.7	66.4	327.2	189.1	176.5	309.3	210.7
Lao PDR	18.2	25.1	12.1	13.0	29.4	16.9	52.6	72.6	35.0	37.5	85.1	49.0
Lesotho	3.7	21.5	7.5	7.2	13.6	10.8	10.8	62.3	21.6	20.8	39.5	31.4
Micronesia, Fed. Sts.	4.7	6.5	3.1	3.3	7.6	4.4	13.6	18.8	9.0	9.7	22.0	12.8
Moldova	2.0	8.2	9.9	9.7	16.0	10.2	5.8	23.7	28.7	28.1	46.4	29.5
Mongolia	30.0	41.4	20.0	21.4	48.5	26.5	86.9	119.9	57.9	62.0	140.6	76.8
Morocco	4.4	21.7	12.5	11.7	20.5	14.0	12.7	62.8	36.3	33.9	59.4	40.5
Nicaragua	3.1	18.1	8.2	9.0	19.0	10.6	8.9	52.4	23.7	26.1	55.2	30.8
Nigeria	6.3	36.5	12.7	12.2	23.2	18.3	18.4	105.8	36.8	35.3	67.1	53.1
Pakistan	2.9	14.4	8.3	7.8	13.6	9.3	8.5	41.7	24.1	22.5	39.4	27.0
Papua New Guinea	13.0	18.0	8.7	9.3	21.1	12.3	37.7	52.1	25.1	26.9	61.1	35.5
Paraguay	2.4	14.3	6.5	7.1	15.0	8.5	7.0	41.4	18.7	20.6	43.5	24.5
Philippines	8.4	11.6	5.6	6.0	13.6	7.8	24.3	33.5	16.2	17.3	39.3	22.6
Samoa	5.7	7.9	3.8	4.1	9.3	5.5	16.6	22.9	11.0	11.8	26.8	16.0
Sao Tome and Principe	6.6	37.7	13.1	12.6	23.9	19.1	19.0	109.2	37.9	36.4	69.2	55.4
Senegal	5.8	33.6	11.7	11.2	21.3	16.9	16.9	97.2	33.8	32.4	61.6	49.0
Solomon Islands	4.8	6.6	3.2	3.4	7.7	4.5	13.9	19.1	9.2	9.9	22.4	13.1
Sri Lanka	5.7	7.8	3.8	4.1	9.2	5.3	16.4	22.7	10.9	11.7	26.6	15.4
Sudan	10.8	62.3	21.6	20.8	39.5	31.3	31.3	180.3	62.6	60.1	114.3	90.6
Swaziland	6.6	38.0	13.2	12.7	24.1	19.1	19.1	109.9	38.2	36.6	69.7	55.3
Syrian Arab Republic	3.1	15.1	8.7	8.1	14.2	9.9	8.9	43.7	25.2	23.5	41.3	28.5
Timor-Leste	10.7	14.7	7.1	7.6	17.3	10.5	30.9	42.6	20.6	22.0	50.0	30.3
Tonga	3.6	4.9	2.4	2.5	5.8	3.4	10.3	14.2	6.9	7.3	16.7	9.9
Ukraine	2.3	9.6	11.6	11.3	18.7	12.3	6.8	27.7	33.5	32.8	54.1	35.7
Uzbekistan	2.7	13.3	7.7	7.2	12.6	8.5	7.8	38.5	22.3	20.8	36.4	24.6
Vanuatu	5.2	7.2	3.5	3.7	8.4	4.9	15.1	20.8	10.0	10.8	24.4	14.2
Vietnam	11.2	15.4	7.4	8.0	18.1	10.0	32.4	44.7	21.6	23.1	52.4	28.8
Yemen, Rep.	10.1	49.7	28.7	26.8	47.0	31.9	29.2	144.0	83.2	77.6	136.1	92.5
Zambia	6.5	37.6	13.1	12.5	23.8	19.2	18.9	108.9	37.8	36.3	69.0	55.6
Upper middle income countries												
Algeria	3.6	17.7	10.2	9.6	16.8	11.3	10.4	51.4	29.7	27.7	48.5	32.6
Angola	14.3	82.1	28.5	27.4	52.1	42.3	41.3	237.9	82.6	79.3	150.8	122.6
Argentina	1.8	10.9	4.9	5.4	11.4	6.7	5.3	31.4	14.2	15.7	33.1	19.3
Azerbaijan	1.1	5.2	3.0	2.8	4.9	3.3	3.1	15.2	8.8	8.2	14.3	9.4
Belarus	2.8	11.3	13.7	13.4	22.2	14.4	8.0	32.8	39.7	38.9	64.2	41.7
Bosnia and Herzegovina	0.5	2.0	2.5	2.4	4.0	2.6	1.4	5.9	7.2	7.0	11.6	7.6
Botswana	6.0	34.4	12.0	11.5	21.8	16.6	17.3	99.7	34.6	33.2	63.2	48.2
Brazil	4.3	25.0	11.3	12.5	26.4	14.9	12.3	72.5	32.8	36.2	76.3	43.3
Bulgaria	1.5	6.1	7.4	7.2	11.9	8.1	4.3	17.7	21.4	21.0	34.6	23.4
Chile	2.5	14.8	6.7	7.4	15.6	8.9	7.3	42.8	19.4	21.4	45.1	25.8
China	5.4	16.8	10.4	14.5	33.4	14.6	15.7	48.5	30.1	42.1	96.8	42.2

continued

TABLE E-4 (continued)

Annual Estimated Femoral Fracture Incidence Rate (per 100,000)													
		Low Estimate						High Estimate					
		0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Country													
Colombia		4.0	23.8	10.8	11.9	25.1	14.0	11.7	69.0	31.2	34.4	72.6	40.5
Costa Rica		3.1	18.5	8.4	9.2	19.5	10.9	9.1	53.7	24.3	26.8	56.5	31.6
Cuba		1.9	11.4	5.1	5.7	11.9	7.0	5.6	32.9	14.9	16.4	34.6	20.3
Dominican Republic		9.1	53.7	24.3	26.8	56.5	31.9	26.4	155.6	70.5	77.6	163.7	92.4
Ecuador		2.9	16.9	7.7	8.4	17.8	10.1	8.3	49.0	22.2	24.4	51.6	29.1
Gabon		6.5	37.3	12.9	12.4	23.6	18.4	18.7	107.9	37.5	36.0	68.4	53.3
Grenada		0.7	4.1	1.9	2.0	4.3	2.4	2.0	11.8	5.4	5.9	12.5	7.0
Iran, Islamic Rep.		11.9	58.4	33.8	31.5	55.2	36.9	34.3	169.2	97.8	91.3	159.9	106.7
Jamaica		2.6	15.2	6.9	7.6	16.0	9.2	7.5	44.0	19.9	21.9	46.3	26.7
Jordan		5.2	25.9	14.9	13.9	24.4	16.8	15.2	74.9	43.3	40.4	70.8	48.6
Kazakhstan		4.1	20.3	11.7	10.9	19.2	12.8	11.9	58.8	34.0	31.7	55.6	37.0
Latvia		2.7	11.1	13.4	13.1	21.6	14.5	7.8	32.0	38.8	38.0	62.6	41.9
Lebanon		8.8	43.4	25.1	23.4	41.0	28.4	25.5	125.8	72.7	67.8	118.8	82.2
Libya		4.8	23.8	13.8	12.9	22.5	15.2	14.0	69.0	39.9	37.2	65.3	43.9
Lithuania		2.7	11.2	13.6	13.3	21.9	14.5	7.9	32.5	39.3	38.5	63.5	42.0
Macedonia, FYR		1.2	4.8	5.8	5.6	9.3	5.9	3.4	13.8	16.7	16.3	26.9	17.2
Malaysia		11.7	16.2	7.8	8.4	19.0	10.8	33.9	46.8	22.6	24.2	54.9	31.4
Maldives		21.0	29.0	14.0	15.0	34.0	18.8	60.9	84.0	40.5	43.4	98.5	54.5
Mauritius		3.8	22.1	7.7	7.4	14.0	10.3	11.1	64.1	22.3	21.4	40.6	29.8
Mexico		4.1	24.1	10.9	12.0	25.4	14.3	11.9	69.9	31.6	34.8	73.5	41.3
Namibia		5.5	31.9	11.1	10.6	20.2	15.8	16.0	92.3	32.1	30.8	58.5	45.8
Panama		3.0	17.5	7.9	8.7	18.4	10.4	8.6	50.6	22.9	25.2	53.2	30.1
Peru		2.9	17.3	7.8	8.6	18.2	10.2	8.5	50.0	22.6	24.9	52.6	29.6
Romania		1.4	5.9	7.1	7.0	11.5	7.5	4.1	17.0	20.6	20.1	33.2	21.9
Russian Federation		3.8	15.5	18.8	18.4	30.4	19.6	11.0	45.0	54.5	53.4	88.0	56.8
South Africa		9.9	56.9	19.8	19.0	36.1	27.3	28.6	16.8	57.2	54.9	104.4	79.1
St. Lucia		3.5	20.6	9.3	10.3	21.7	12.1	10.1	5.8	27.1	29.8	62.9	35.0
St. Vincent and the Grenadines		1.6	9.7	4.4	4.8	10.2	5.7	4.8	28.0	12.7	14.0	29.5	16.6
Suriname		5.7	33.8	15.3	16.8	35.5	20.1	16.6	97.8	44.3	48.8	102.9	58.4
Thailand		17.8	24.6	11.8	12.7	28.8	16.4	51.5	71.1	34.3	36.8	83.4	47.4
Tunisia		5.7	27.9	16.1	15.0	26.4	17.9	16.4	80.8	46.7	43.6	76.4	51.8
Turkey		2.4	11.8	6.8	6.4	11.2	7.6	6.9	34.2	19.8	18.5	32.4	22.1
Turkmenistan		1.8	9.1	5.2	4.9	8.6	5.8	5.3	26.3	15.2	14.2	24.8	16.8
Uruguay		2.0	11.8	5.4	5.9	12.5	7.5	5.8	34.3	15.5	17.1	36.1	21.7
Venezuela, RB		5.3	31.5	14.3	15.7	33.1	18.5	15.5	91.2	41.3	45.5	96.0	53.7
High income countries													
Australia		1.3	4.2	5.5	3.3	9.5	5.4	3.7	12.2	15.8	9.5	27.5	15.6
Austria		1.6	5.1	6.6	4.0	11.5	6.8	4.5	14.8	19.2	11.5	33.3	19.7
Bahamas, The		4.2	24.6	11.1	12.3	25.9	14.4	12.1	71.3	32.3	35.6	75.0	41.7
Bahrain		2.9	14.2	8.2	7.7	13.4	8.7	8.3	41.1	23.8	22.2	38.8	25.1
Barbados		2.5	14.7	6.6	7.3	15.4	9.0	7.2	42.5	19.2	21.2	44.7	26.0
Belgium		2.2	7.2	9.4	5.6	16.3	9.5	6.4	20.9	27.2	16.3	47.1	27.7
Brunei Darussalam		11.8	16.3	7.9	8.4	19.1	10.4	34.2	47.2	22.8	24.4	55.3	30.1
Canada		1.4	4.6	5.9	3.6	10.3	5.9	4.0	13.2	17.2	10.3	29.8	17.0
Croatia		1.8	7.3	8.8	8.6	14.2	9.5	5.1	21.0	25.4	24.9	41.1	27.5
Cyprus		4.4	21.5	12.4	11.6	20.4	14.2	12.7	62.4	36.1	33.6	59.0	41.2
Czech Republic		1.2	4.9	5.9	5.8	9.5	6.3	3.4	14.1	17.0	16.7	27.5	18.3
Denmark		1.3	4.2	5.5	3.3	9.5	5.6	3.7	12.2	15.8	9.5	27.5	16.1
Equatorial Guinea		8.9	51.0	17.7	17.0	32.3	24.9	25.7	147.8	51.3	49.3	93.7	72.1
Estonia		1.7	7.1	8.6	8.5	13.9	9.3	5.0	20.6	25.0	24.5	40.3	26.8
Finland		1.2	3.8	5.0	3.0	8.6	5.1	3.4	11.1	14.4	8.6	25.0	14.8
France		1.6	5.2	6.8	4.1	11.8	6.9	4.6	15.2	19.7	11.8	34.2	20.0
													continued

continued

TABLE E-4 (continued)

Country	Annual Estimated Femoral Fracture Incidence Rate (per 100,000)											
	Low Estimate						High Estimate					
	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total	0-4 Yr	5-14 Yr	15-44 Yr	45-59 Yr	≥60 Yr	Total
Germany	1.2	4.0	5.2	3.1	8.9	5.4	3.5	11.5	14.9	9.0	25.9	15.6
Greece	2.6	8.7	11.3	6.8	19.6	11.7	7.7	25.1	32.7	19.6	56.7	33.9
Hungary	1.7	7.1	8.6	8.4	13.9	9.3	5.0	20.6	25.0	24.4	40.3	26.9
Iceland	1.3	4.2	5.5	3.3	9.5	5.3	3.7	12.2	15.9	9.5	27.5	15.2
Ireland	1.2	4.0	5.2	3.1	9.1	5.0	3.6	11.7	15.2	9.1	26.3	14.5
Israel	1.0	5.0	2.9	2.7	4.8	3.3	3.0	14.6	8.4	7.9	13.8	9.7
Italy	1.9	6.3	8.2	4.9	14.3	8.7	5.6	18.3	23.8	14.3	41.3	25.1
Japan	1.0	3.3	4.3	2.6	7.5	4.8	2.9	9.7	12.6	7.5	21.8	13.8
Korea, Rep.	13.3	18.3	8.8	9.5	21.5	12.3	38.5	53.1	25.6	27.4	62.2	35.6
Kuwait	3.7	18.4	10.6	9.9	17.4	11.4	10.8	53.2	30.7	28.7	50.3	33.0
Luxembourg	2.0	6.4	8.3	5.0	14.5	8.2	5.7	18.6	24.2	14.5	41.9	23.8
Malta	0.5	1.8	2.3	1.4	4.0	2.3	1.6	5.2	6.7	4.0	11.7	6.8
Netherlands	0.9	2.8	3.7	2.2	6.4	3.7	2.5	8.2	10.7	6.4	18.5	10.7
New Zealand	2.0	6.6	8.5	5.1	14.8	8.3	5.8	19.0	24.7	14.8	42.8	23.9
Norway	1.0	3.3	4.2	2.5	7.4	4.3	2.9	9.5	12.3	7.4	21.3	12.3
Oman	2.6	13.0	7.5	7.0	12.3	8.1	7.7	37.8	21.8	20.4	35.7	23.6
Poland	1.9	7.8	9.5	9.3	15.3	10.0	5.5	22.7	27.5	26.9	44.3	29.0
Portugal	2.9	9.6	12.4	7.5	21.6	12.8	8.4	27.7	36.0	21.6	62.5	37.2
Qatar	3.9	19.3	11.1	10.4	18.2	11.5	11.3	55.8	32.3	30.1	52.8	33.2
Saudi Arabia	5.2	25.5	14.7	13.7	24.1	16.0	15.0	73.8	42.6	39.8	69.7	46.2
Singapore	5.3	7.4	3.6	3.8	8.6	4.9	15.5	21.4	10.3	11.0	25.0	14.2
Slovenia	1.7	7.0	8.5	8.3	13.7	9.1	4.9	20.2	24.5	24.0	39.6	26.4
Spain	1.8	5.9	7.7	4.6	13.3	7.8	5.2	17.1	22.2	13.3	38.5	22.7
Sweden	1.0	3.3	4.3	2.6	7.4	4.4	2.9	9.5	12.4	7.4	21.4	12.8
Switzerland	1.0	3.3	4.3	2.6	7.5	4.4	2.9	9.6	12.4	7.5	21.6	12.7
Trinidad and Tobago	3.1	18.4	8.3	9.2	19.3	10.6	9.0	53.2	24.1	26.5	55.9	30.8
United Arab Emirates	5.6	27.7	16.0	15.0	26.2	16.8	16.3	80.3	46.4	43.3	75.9	48.6
United Kingdom	1.0	3.4	4.5	2.7	7.8	4.5	3.0	10.0	13.0	7.8	22.5	13.2
United States	2.6	8.4	10.9	6.5	18.9	10.6	7.4	24.3	31.6	18.9	54.8	30.6

TABLE E-5 RR for Femoral Fracture Incidence, According to Age and Income Group, Relative to HICs*

Age Group (yr)	Income Level	RR	95% CI	P Value†
0-4	Low	3.57	3.47 to 3.66	<0.001
	Lower middle	3.51	3.42 to 3.60	<0.001
	Upper middle	2.40	2.34 to 2.47	<0.001
	Low and middle	3.15	3.06 to 3.23	<0.001
	High	1	—	—
5-14	Low	4.72	4.59 to 4.85	<0.001
	Lower middle	3.51	3.42 to 3.60	<0.001
	Upper middle	3.12	3.04 to 3.21	<0.001
	Low and middle	3.64	3.54 to 3.75	<0.001
	High	1	—	—
15-44	Low	1.55	1.51 to 1.59	<0.001
	Lower middle	1.27	1.24 to 1.31	<0.001
	Upper middle	1.52	1.47 to 1.56	<0.001
	Low and middle	1.38	1.34 to 1.42	<0.001
	High	1	—	—
45-59	Low	2.26	2.20 to 2.32	<0.001
	Lower middle	2.30	2.24 to 2.36	<0.001
	Upper middle	2.87	2.80 to 2.95	<0.001
	Low and middle	2.61	2.54 to 2.68	<0.001
	High	1	—	—
≥60	Low	1.87	1.82 to 1.92	<0.001
	Lower middle	3.59	3.50 to 3.69	<0.001
	Upper middle	2.49	2.42 to 2.55	<0.001
	Low and middle	2.83	2.75 to 2.90	<0.001
	High	1	—	—
Total	Low	2.27	2.21 to 2.33	<0.001
	Lower middle	2.05	1.99 to 2.10	<0.001
	Upper middle	2.05	2.00 to 2.11	<0.001
	Low and middle	2.08	2.02 to 2.13	<0.001
	High	1	—	—

*RRs are presented in five age-group strata and overall (total). RR estimates are averaged across 1000 Monte Carlo simulations in which point estimates of femoral fracture incidence were sampled over the full range of estimates for each income and age group as generated by the mathematical model. Each 95% CI was calculated as two times the standard error above and below the mean RR. †Two-tailed t test.

TABLE E-6 RR for Femoral Fracture Incidence, According to Age and Income Group, Relative to the Overall Incidence Rate in the Income Group*				
Income Group	Age Group (yr)	RR	95% CI	P Value†
Low	0-4	0.53	0.52 to 0.55	<0.001
	5-14	2.11	2.05 to 2.16	<0.001
	15-44	0.75	0.73 to 0.77	<0.001
	45-59	0.71	0.69 to 0.73	<0.001
	≥60	1.44	1.40 to 1.47	<0.001
	Total	1	—	—
Lower middle	0-4	0.58	0.57 to 0.60	<0.001
	5-14	1.74	1.70 to 1.79	<0.001
	15-44	0.68	0.67 to 0.70	<0.001
	45-59	0.80	0.78 to 0.82	<0.001
	≥60	3.06	2.98 to 3.15	<0.001
	Total	1	—	—
Upper middle	0-4	0.40	0.39 to 0.41	<0.001
	5-14	1.55	1.51 to 1.59	<0.001
	15-44	0.82	0.80 to 0.84	<0.001
	45-59	1.01	0.98 to 1.03	0.62
	≥60	2.14	2.08 to 2.20	<0.001
	Total	1	—	—
Low and middle	0-4	0.52	0.51 to 0.54	<0.001
	5-14	1.79	1.74 to 1.84	<0.001
	15-44	0.74	0.72 to 0.76	<0.001
	45-59	0.91	0.88 to 0.93	<0.001
	≥60	2.39	2.33 to 2.46	<0.001
	Total	1	—	—
High	0-4	0.34	0.33 to 0.35	<0.001
	5-14	1.03	1.00 to 1.05	0.06
	15-44	1.10	1.07 to 1.13	<0.001
	45-59	0.71	0.69 to 0.73	<0.001
	≥60	1.76	1.71 to 1.80	<0.001
	Total	1	—	—
*RRs are presented in each income group strata. RR estimates are averaged across 1000 Monte Carlo simulations in which point estimates of femoral fracture incidence were sampled over the full range of estimates for each income and age group as generated by the mathematical model. Each 95% CI was calculated as two times the standard error above and below the mean RR. †Two-tailed t test.				