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DISABILITY AND DEATH PROBABILITY TABLES FOR INSURED WORKERS BORN IN 1998

by Johanna Maleh, FSA, and Tiffany Bosley, FSA

Introduction

The Social Security program is not just a program for providing income during retirement. Workers who meet certain requirements for insured status may receive monthly cash benefits before retirement age if they have impairments resulting in disability.[1] Survivors may receive benefits after the death of an insured worker, retired worker, or a disabled worker. This note illustrates the likelihood that a young worker, while maintaining insured status, will become disabled or die, resulting in payment of disability or survivor benefits prior to becoming eligible for full retirement benefits. We make these illustrations using the intermediate assumptions of the 2018 Trustees Report. This note succeeds *Actuarial Note Number 2017.6*, which was based on the intermediate assumptions of the 2017 Trustees Report.

We make projections of the number of insured workers who die or become disabled each year for the next 75 years. These projections depend on age-sex-specific mortality and disabled-worker incidence rates, and age-sex-duration-specific disabled-life mortality and recovery rates. Additional information regarding these projections is provided in annual reports of the Board of Trustees of the Old-Age and Survivors Insurance and Disability Insurance Trust Funds (Trustees Reports) and in actuarial studies.[2]

Using projected rates of disabled-worker incidence, death, and recovery under the intermediate assumptions, we estimate the probability that an illustrative worker will become disabled or die before reaching normal retirement age (NRA). We define an illustrative worker in this note as one who: (a) is born in 1998, that is, belongs to the 1998 birth cohort; (b) becomes insured at age 20 in 2018; (c) maintains insured status thereafter; and (d) retires at NRA. The NRA, the age at which a person may first become entitled to retirement benefits without reduction based on age, is age 67 for our illustrative worker. Tables A and B compare these estimates using the 1998 birth cohort with those published in prior years. The projected probabilities of death before NRA have decreased between the 1966 and 1998 birth cohorts, reflecting in part the actual improvement in mortality experience between 1986 and 2018. The projected probability of becoming disabled before NRA has decreased for insured men between the 1966 and 1998 birth cohorts, but has increased for insured women. For the 1998 birth cohort, we project that the probability of surviving from age 20 to NRA without ever being disabled is 64 percent for males and 70 percent for females. Comparable probabilities projected for the 1966 birth cohort are 58 percent for males and 70 percent for females.

Table B shows the total projected probability of death as the sum of the probability of death and disability and the probability of death and no disability. Between the 1997 and 1998 birth cohorts, both the projected probability of death before NRA and the projected probability of becoming disabled (as shown in Table A) increased slightly between these cohorts.

Assumptions and Methods

Tables C and D show disability and death probabilities for insured males and females, respectively, who were born in 1998. We derive death and disability rates by sex and single year of age (20 through 67) for four population groups: active, disabled, recovered, and total. The active group is composed of insured workers who are alive and have never been disabled. The disabled group consists of workers who are currently entitled to receive a Social Security disabled-worker benefit. The recovered group consists of insured workers who have had a prior disability, but are not currently entitled to receive a disabled-worker benefit. The total group is the sum of the active, disabled, and recovered groups, otherwise known as the insured population. All workers are assumed to be fully and disability insured at all times after reaching age 20.[3] For each age, we calculate deaths, entitlements to disabled-worker benefits, and

[1] Disabled means inability to engage in any substantial gainful activity as a result of medically determinable physical or mental impairments that can be expected to result in death or to last for a continuous period of not less than 12 months. Special rules apply for workers at ages 55 and over whose disability is based on blindness.

[2] These publications may be found at: http://www.ssa.gov/OACT/pubs.html.

[3] Computing disabled-worker incidence rates by age using insured workers gives a larger probability of disability entitlement than if all workers were included in the calculations.

recoveries from the disability rolls. For each population group (active, disabled, recovered, and total), we determine the number of persons alive at the beginning of the next year by adding or subtracting the relevant components of change to the number of persons alive at the beginning of the year.

For those born in 1998, we develop cohort insured life tables for each sex, from age 20 to age 67. To calculate total deaths for the insured population, we apply the age-sex-specific mortality rates of the general population to the total insured population at the beginning of the year.[4]

We calculate deaths for the disabled-worker population by applying age-sex-duration-specific[5] disabled-life mortality rates to the disabled-worker population at the beginning of the year. We assume that newly entitled disabled-worker beneficiaries, that is, those in duration 0, are exposed for half a year, because on average they become entitled at mid-year. We calculate deaths for those who have recovered from disability ("recovered deaths") by applying the age-sex-specific mortality rates of the general population to the recovered population at the beginning of the year, with adjustments. To make these adjustments, we add half of the newly recovered population and subtract half of those newly disabled from the recovered population for that year. Active deaths are the residual: we subtract the disabled deaths and recovered deaths from the total population deaths.

We develop cohort disabled-worker incidence rates for each sex, from age 20 to age 67, for those born in 1998. To calculate the number of newly entitled disabled-worker beneficiaries, we apply the age-sex-specific incidence rates to the active and recovered populations at the beginning of the year.

Finally, we develop rates of recovery from disability for each sex, from age 20 to age 67, for those born in 1998. To calculate the number of recoveries from the disabled-worker population, we apply age-sex-duration-specific[5] recovery rates to the beginning of the year disabled-worker population. We assume that newly entitled disabled-worker beneficiaries (in duration 0) are exposed for half a year in the year of their initial entitlement.

[4] Using general population mortality rates may slightly overstate death rates for the insured population because the group excluded, the uninsured, are likely to have higher death rates than the general population.

[5] Age is age at entitlement to a disabled-worker benefit. Duration refers to the complete number of years since entitlement to a disabled-worker benefit.

Results

Table C provides tabulations which allow for the computation of various probabilities of survival, death, and disability for insured males born in 1998. Table D provides the same information for insured females born in 1998. For example, the probability that an insured female, age 25 in 2023, will survive to age 60 without ever becoming disabled is 78 percent. To get this result, we divide the number of active lives at age 60 (776,491) by the number of active lives at age 25 (989,910).

Table E uses the tabulations in tables C and D to derive various probabilities of disability, death, and survival for insured males and females born in 1998. We calculate the probability of survival without disability from age 20 to age *x* by dividing the active insured population at the beginning of the year at age *x* by the active insured population at the beginning of the year at age 20. The probability of dying or becoming disabled after age 20 and before age *x* is calculated as the complement, that is, 1 minus the probability of surviving without disability from age 20 to age *x*. For example, we project that an insured male worker who attained age 20 in 2018 has a 64 percent chance of surviving to age 67 without ever becoming disabled and a 36 percent chance of either dying or becoming disabled prior to age 67.

Table E also includes probabilities of an insured worker becoming disabled and of an insured worker dying while never disabled. These probabilities are shown from age 20 to age *x*. We calculate these values by dividing the total newly disabled and the total deaths from the active insured population from age 20 to age *x,* respectively, by the active insured population alive at the beginning of the year of attaining age 20. For example, we project that an insured female worker who attained age 20 in 2018 has a 19 percent chance of becoming disabled between age 20 and age 60. In addition, the probability that she will die between age 20 and age 60 without ever receiving Social Security disability benefits is only 3 percent.

Table A: Probability of Disability and Death for Illustrative Cases of Insured Workers

Trustees Report Year [1] *(Year of Attainment of Age 20)*	Year of Birth	Probability of Disability Before NRA			Probability of Death While Never Disabled Before NRA			Probability of Survival to NRA With No Disability		
		Male	Female	Total[2]	Male	Female	Total[2]	Male	Female	Total[2]
1986	1966	0.322	0.240	0.281	0.095	0.060	0.077	0.583	0.700	0.642
2011	1991	0.276	0.260	0.268	0.091	0.049	0.070	0.633	0.691	0.662
2012	1992	0.276	0.264	0.270	0.090	0.048	0.069	0.634	0.688	0.661
2013	1993	0.275	0.264	0.270	0.085	0.044	0.065	0.639	0.692	0.666
2014	1994	0.277	0.263	0.270	0.082	0.042	0.062	0.641	0.695	0.668
2015	1995	0.279	0.265	0.272	0.078	0.040	0.059	0.643	0.695	0.669
2016	1996	0.277	0.262	0.270	0.078	0.041	0.059	0.645	0.697	0.671
2017	1997	0.275	0.260	0.268	0.080	0.042	0.061	0.645	0.697	0.671
2018	1998	0.277	0.262	0.269	0.081	0.042	0.062	0.642	0.696	0.669

[1] Calculations are based on the intermediate assumptions of that year's Trustees Report (alternative II-B for the 1986 Trustees Report).
[2] Totals are obtained by combining tables C and D. For example, the probability of death while never disabled before NRA equals 6.2 percent for the 1998 birth cohort (80,941 + 42,283) / (1,000,000 + 1,000,000).

Notes: Probabilities are determined assuming all illustrative workers are disability insured throughout their working lives.

For a recent historical perspective, see Actuarial Study 123, Social Security Disability Insurance Program Worker Experience, at: http://www.ssa.gov/OACT/NOTES/actstud.html.

Table B: Probability of Death for Illustrative Cases of Insured Workers by Disabled Status

Trustees Report Year[1] *(Year of Attainment of Age 20)*	Year of Birth	(A) = (B) + (C) Probability of Death Before NRA			(B) Probability of Death and Disability Before NRA			(C) Probability of Death and No Disability Before NRA[2]		
		Male	Female	Total[3]	Male	Female	Total[3]	Male	Female	Total[3]
1986	1966	0.221	0.129	0.175	0.121	0.067	0.094	0.100	0.062	0.081
2011	1991	0.155	0.096	0.125	0.061	0.045	0.053	0.094	0.050	0.072
2012	1992	0.153	0.095	0.124	0.061	0.045	0.053	0.092	0.049	0.071
2013	1993	0.149	0.090	0.119	0.061	0.045	0.053	0.088	0.045	0.066
2014	1994	0.145	0.088	0.116	0.061	0.045	0.053	0.084	0.043	0.064
2015	1995	0.143	0.087	0.115	0.063	0.045	0.054	0.080	0.042	0.061
2016	1996	0.142	0.087	0.115	0.062	0.045	0.053	0.081	0.042	0.061
2017	1997	0.144	0.088	0.116	0.061	0.045	0.053	0.082	0.043	0.063
2018	1998	0.146	0.090	0.118	0.063	0.046	0.055	0.083	0.044	0.063

[1] Calculations are based on the intermediate assumptions of that year's Trustees Report (alternative II-B for the 1986 Trustees Report).
[2] Includes workers who recovered from disabilities.
[3] Totals are obtained by combining tables C and D. For example, the probability of death and disability before NRA equals 5.5 percent for the 1998 birth cohort (62,795 + 46,215) / (1,000,000 + 1,000,000).

Notes:

1. Probabilities are determined assuming all illustrative workers are disability insured throughout their working lives.

For a recent historical perspective, see Actuarial Study 123, Social Security Disability Insurance Program Worker Experience, at: http://www.ssa.gov/OACT/NOTES/actstud.html.

2. Totals do not necessarily equal the sum of rounded components.

Table C: Disability and Death Probabilities for the Male 1998 Birth Cohort

	Living At Beginning Of Year				Deaths								Newly Disabled						Newly Recovered	
					Total		Active		Disabled		Recovered		Total		Active		Recovered			
Age x	Total	Active	Disabled	Recovered	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1
20	1,000,000	1,000,000	0	0	938	938	930	930	8	8	0	0	2,397	2,397	2,397	2,397	0	0	5	5
21	999,062	996,673	2,384	5	1,054	1,992	1,030	1,960	24	32	0	0	2,460	4,857	2,460	4,857	0	0	18	23
22	998,008	993,183	4,802	23	1,144	3,136	1,105	3,065	39	71	0	0	2,545	7,402	2,545	7,402	0	0	32	55
23	996,864	989,533	7,276	55	1,198	4,334	1,143	4,208	55	126	0	0	2,583	9,985	2,583	9,985	0	0	54	109
24	995,666	985,807	9,750	109	1,228	5,562	1,158	5,366	70	196	0	0	2,635	12,620	2,635	12,620	0	0	109	218
25	994,438	982,014	12,206	218	1,249	6,811	1,159	6,525	90	286	0	0	2,181	14,801	2,181	14,801	0	0	266	484
26	993,189	978,674	14,031	484	1,275	8,086	1,170	7,695	104	390	1	1	1,723	16,524	1,722	16,523	1	1	418	902
27	991,914	975,782	15,232	900	1,303	9,389	1,194	8,889	107	497	2	3	1,816	18,340	1,814	18,337	2	3	488	1,390
28	990,611	972,774	16,453	1,384	1,336	10,725	1,210	10,099	124	621	2	5	1,906	20,246	1,903	20,240	3	6	545	1,935
29	989,275	969,661	17,690	1,924	1,372	12,097	1,230	11,329	139	760	3	8	1,991	22,237	1,987	22,227	4	10	582	2,517
30	987,903	966,444	18,960	2,499	1,408	13,505	1,236	12,565	168	928	4	12	2,104	24,341	2,099	24,326	5	15	626	3,143
31	986,495	963,109	20,270	3,116	1,438	14,943	1,231	13,796	202	1,130	5	17	2,231	26,572	2,224	26,550	7	22	649	3,792
32	985,057	959,654	21,650	3,753	1,463	16,406	1,234	15,030	223	1,353	6	23	2,336	28,908	2,327	28,877	9	31	653	4,445
33	983,594	956,093	23,110	4,391	1,477	17,883	1,226	16,256	244	1,597	7	30	2,454	31,362	2,443	31,320	11	42	662	5,107
34	982,117	952,424	24,658	5,035	1,488	19,371	1,202	17,458	278	1,875	8	38	2,552	33,914	2,539	33,859	13	55	675	5,782
35	980,629	948,683	26,257	5,689	1,504	20,875	1,195	18,653	300	2,175	9	47	2,693	36,607	2,677	36,536	16	71	681	6,463
36	979,125	944,811	27,969	6,345	1,527	22,402	1,197	19,850	320	2,495	10	57	2,868	39,475	2,849	39,385	19	90	671	7,134
37	977,598	940,765	29,846	6,987	1,547	23,949	1,174	21,024	361	2,856	12	69	3,024	42,499	3,002	42,387	22	112	678	7,812
38	976,051	936,589	31,831	7,631	1,561	25,510	1,151	22,175	397	3,253	13	82	3,206	45,705	3,180	45,567	26	138	658	8,470
39	974,490	932,258	33,982	8,250	1,578	27,088	1,127	23,302	437	3,690	14	96	3,420	49,125	3,390	48,957	30	168	658	9,128
40	972,912	927,741	36,307	8,864	1,602	28,690	1,111	24,413	476	4,166	15	111	3,619	52,744	3,585	52,542	34	202	655	9,783
41	971,310	923,045	38,795	9,470	1,647	30,337	1,097	25,510	533	4,699	17	128	3,825	56,569	3,786	56,328	39	241	677	10,460
42	969,663	918,162	41,410	10,091	1,723	32,060	1,108	26,618	596	5,295	19	147	4,050	60,619	4,006	60,334	44	285	685	11,145
43	967,940	913,048	44,179	10,713	1,837	33,897	1,151	27,769	665	5,960	21	168	4,290	64,909	4,240	64,574	50	335	685	11,830
44	966,103	907,657	47,119	11,327	1,983	35,880	1,228	28,997	731	6,691	24	192	4,544	69,453	4,488	69,062	56	391	678	12,508
45	964,120	901,941	50,254	11,925	2,152	38,032	1,337	30,334	788	7,479	27	219	4,773	74,226	4,711	73,773	62	453	707	13,215
46	961,968	895,893	53,532	12,543	2,336	40,368	1,444	31,778	861	8,340	31	250	5,016	79,242	4,947	78,720	69	522	753	13,968
47	959,632	889,502	56,934	13,196	2,536	42,904	1,542	33,320	958	9,298	36	286	5,283	84,525	5,206	83,926	77	599	742	14,710
48	957,096	882,754	60,517	13,825	2,752	45,656	1,639	34,959	1,072	10,370	41	327	5,500	90,025	5,415	89,341	85	684	725	15,435
49	954,344	875,700	64,220	14,424	2,984	48,640	1,773	36,732	1,165	11,535	46	373	5,673	95,698	5,581	94,922	92	776	668	16,103
50	951,360	868,346	68,060	14,954	3,223	51,863	1,936	38,668	1,235	12,770	52	425	6,923	102,621	6,806	101,728	117	893	690	16,793
51	948,137	859,604	73,058	15,475	3,480	55,343	2,055	40,723	1,367	14,137	58	483	8,400	111,021	8,251	109,979	149	1,042	722	17,515
52	944,657	849,298	79,369	15,990	3,771	59,114	2,162	42,885	1,544	15,681	65	548	8,499	119,520	8,342	118,321	157	1,199	683	18,198
53	940,886	838,794	85,641	16,451	4,102	63,216	2,307	45,192	1,722	17,403	73	621	8,437	127,957	8,275	126,596	162	1,361	656	18,854
54	936,784	828,212	91,700	16,872	4,458	67,674	2,472	47,664	1,905	19,308	81	702	8,695	136,652	8,521	135,117	174	1,535	604	19,458
55	932,326	817,219	97,886	17,221	4,846	72,520	2,670	50,334	2,085	21,393	91	793	10,329	146,981	10,116	145,233	213	1,748	646	20,104
56	927,480	804,433	105,484	17,563	5,226	77,746	2,796	53,130	2,330	23,723	100	893	12,257	159,238	11,995	157,228	262	2,010	672	20,776
57	922,254	789,642	114,739	17,873	5,544	83,290	2,855	55,985	2,580	26,303	109	1,002	12,413	171,651	12,138	169,366	275	2,285	668	21,444
58	916,710	774,649	123,904	18,157	5,771	89,061	2,865	58,850	2,791	29,094	115	1,117	12,460	184,111	12,175	181,541	285	2,570	640	22,084
59	910,939	759,609	132,933	18,397	5,946	95,007	2,810	61,660	3,015	32,109	121	1,238	13,090	197,201	12,780	194,321	310	2,880	592	22,676
60	904,993	744,019	142,416	18,558	6,118	101,125	2,698	64,358	3,293	35,402	127	1,365	13,831	211,032	13,494	207,815	337	3,217	708	23,384
61	898,875	727,827	152,246	18,802	6,346	107,471	2,512	66,870	3,700	39,102	134	1,499	14,634	225,666	14,265	222,080	369	3,586	845	24,229
62	892,529	711,050	162,335	19,144	6,663	114,134	2,461	69,331	4,058	43,160	144	1,643	15,040	240,706	14,646	236,726	394	3,980	801	25,030
63	885,866	693,943	172,516	19,407	7,103	121,237	2,424	71,755	4,522	47,682	157	1,800	14,352	255,058	13,962	250,688	390	4,370	751	25,781
64	878,763	677,557	181,595	19,611	7,647	128,884	2,553	74,308	4,922	52,604	172	1,972	12,050	267,108	11,711	262,399	339	4,709	647	26,428
65	871,116	663,293	188,076	19,747	8,280	137,164	3,031	77,339	5,060	57,664	189	2,161	8,871	275,979	8,615	271,014	256	4,965	507	26,935
66	862,836	651,647	191,380	19,809	8,940	146,104	3,602	80,941	5,131	62,795	207	2,368	6,054	282,033	5,875	276,889	179	5,144	446	27,381
67	853,896	642,170	191,857	19,869																

Table D: Disability and Death Probabilities for the Female 1998 Birth Cohort

					Deaths								Newly Disabled							
	Living At Beginning Of Year				Total		Active		Disabled		Recovered		Total		Active		Recovered		Newly Recovered	
Age x	Total	Active	Disabled	Recovered	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1	x to x+1	20 to x+1
20	1,000,000	1,000,000	-	-	354	354	349	349	5	5	-	-	1,527	1,527	1,527	1,527	-	-	3	3
21	999,646	998,124	1,519	3	391	745	376	725	15	20	-	-	1,564	3,091	1,564	3,091	-	-	11	14
22	999,255	996,184	3,057	14	425	1,170	401	1,126	24	44	-	-	1,619	4,710	1,619	4,710	-	-	22	36
23	998,830	994,164	4,630	36	454	1,624	419	1,545	35	79	-	-	1,669	6,379	1,669	6,379	-	-	36	72
24	998,376	992,076	6,228	72	480	2,104	434	1,979	46	125	-	-	1,732	8,111	1,732	8,111	-	-	65	137
25	997,896	989,910	7,849	137	505	2,609	446	2,425	59	184	-	-	1,546	9,657	1,546	9,657	-	-	148	285
26	997,391	987,918	9,188	285	533	3,142	463	2,888	70	254	-	-	1,377	11,034	1,377	11,034	-	-	239	524
27	996,858	986,078	10,256	524	561	3,703	485	3,373	76	330	-	-	1,483	12,517	1,482	12,516	1	1	288	812
28	996,297	984,111	11,375	811	592	4,295	506	3,879	85	415	1	1	1,583	14,100	1,582	14,098	1	2	326	1,138
29	995,705	982,023	12,547	1,135	624	4,919	527	4,406	96	511	1	2	1,679	15,779	1,677	15,775	2	4	352	1,490
30	995,081	979,819	13,778	1,484	659	5,578	534	4,940	124	635	1	3	1,873	17,652	1,870	17,645	3	7	381	1,871
31	994,422	977,415	15,146	1,861	693	6,271	542	5,482	150	785	1	4	2,121	19,773	2,117	19,762	4	11	411	2,282
32	993,729	974,756	16,706	2,267	725	6,996	549	6,031	174	959	2	6	2,308	22,081	2,303	22,065	5	16	426	2,708
33	993,004	971,904	18,414	2,686	756	7,752	557	6,588	197	1,156	2	8	2,517	24,598	2,510	24,575	7	23	442	3,150
34	992,248	968,837	20,292	3,119	785	8,537	556	7,144	226	1,382	3	11	2,736	27,334	2,727	27,302	9	32	456	3,606
35	991,463	965,554	22,346	3,563	818	9,355	570	7,714	245	1,627	3	14	2,945	30,279	2,934	30,236	11	43	476	4,082
36	990,645	962,050	24,570	4,025	856	10,211	579	8,293	273	1,900	4	18	3,121	33,400	3,108	33,344	13	56	488	4,570
37	989,789	958,363	26,930	4,496	893	11,104	589	8,882	300	2,200	4	22	3,307	36,707	3,292	36,636	15	71	519	5,089
38	988,896	954,482	29,418	4,996	929	12,033	593	9,475	331	2,531	5	27	3,496	40,203	3,478	40,114	18	89	530	5,619
39	987,967	950,411	32,053	5,503	967	13,000	591	10,066	370	2,901	6	33	3,710	43,913	3,689	43,803	21	110	543	6,162
40	987,000	946,131	34,850	6,019	1,011	14,011	601	10,667	404	3,305	6	39	3,925	47,838	3,900	47,703	25	135	588	6,750
41	985,989	941,630	37,783	6,576	1,066	15,077	627	11,294	432	3,737	7	46	4,146	51,984	4,117	51,820	29	164	618	7,368
42	984,923	936,886	40,879	7,158	1,137	16,214	640	11,934	488	4,225	9	55	4,357	56,341	4,324	56,144	33	197	633	8,001
43	983,786	931,922	44,115	7,749	1,228	17,442	681	12,615	537	4,762	10	65	4,607	60,948	4,569	60,713	38	235	651	8,652
44	982,558	926,672	47,534	8,352	1,335	18,777	726	13,341	597	5,359	12	77	4,852	65,800	4,809	65,522	43	278	658	9,310
45	981,223	921,137	51,131	8,955	1,451	20,228	791	14,132	646	6,005	14	91	5,187	70,987	5,137	70,659	50	328	696	10,006
46	979,772	915,209	54,976	9,587	1,574	21,802	846	14,978	712	6,717	16	107	5,536	76,523	5,479	76,138	57	385	749	10,755
47	978,198	908,884	59,051	10,263	1,715	23,517	916	15,894	780	7,497	19	126	5,772	82,295	5,708	81,846	64	449	752	11,507
48	976,483	902,260	63,291	10,932	1,873	25,390	992	16,886	859	8,356	22	148	5,965	88,260	5,894	87,740	71	520	749	12,256
49	974,610	895,374	67,648	11,588	2,045	27,435	1,063	17,949	957	9,313	25	173	6,120	94,380	6,042	93,782	78	598	715	12,971
50	972,565	888,269	72,096	12,200	2,223	29,658	1,192	19,141	1,002	10,315	29	202	7,444	101,824	7,343	101,125	101	699	740	13,711
51	970,342	879,734	77,798	12,810	2,403	32,061	1,270	20,411	1,101	11,416	32	234	8,963	110,787	8,834	109,959	129	828	729	14,440
52	967,939	869,630	84,931	13,378	2,581	34,642	1,307	21,718	1,238	12,654	36	270	8,909	119,696	8,774	118,733	135	963	723	15,163
53	965,358	859,549	91,879	13,930	2,753	37,395	1,366	23,084	1,346	14,000	41	311	8,701	128,397	8,562	127,295	139	1,102	718	15,881
54	962,605	849,621	98,516	14,468	2,922	40,317	1,391	24,475	1,486	15,486	45	356	8,886	137,283	8,737	136,032	149	1,251	655	16,536
55	959,683	839,493	105,261	14,929	3,118	43,435	1,493	25,968	1,576	17,062	49	405	10,113	147,396	9,936	145,968	177	1,428	681	17,217
56	956,565	828,064	113,117	15,384	3,318	46,753	1,568	27,536	1,696	18,758	54	459	11,556	158,952	11,345	157,313	211	1,639	683	17,900
57	953,247	815,151	122,294	15,802	3,469	50,222	1,565	29,101	1,846	20,604	58	517	11,598	170,550	11,377	168,690	221	1,860	644	18,544
58	949,778	802,209	131,402	16,167	3,549	53,771	1,429	30,530	2,059	22,663	61	578	11,556	182,106	11,328	180,018	228	2,088	632	19,176
59	946,229	789,452	140,267	16,510	3,597	57,368	1,236	31,766	2,298	24,961	63	641	11,970	194,076	11,725	191,743	245	2,333	598	19,774
60	942,632	776,491	149,341	16,800	3,642	61,010	1,200	32,966	2,376	27,337	66	707	11,900	205,976	11,648	203,391	252	2,585	667	20,441
61	938,990	763,643	158,198	17,149	3,755	64,765	1,142	34,108	2,544	29,881	69	776	11,920	217,896	11,658	215,049	262	2,847	722	21,163
62	935,235	750,843	166,852	17,540	3,988	68,753	1,105	35,213	2,807	32,688	76	852	12,200	230,096	11,922	226,971	278	3,125	639	21,802
63	931,247	737,816	175,606	17,825	4,383	73,136	1,189	36,402	3,110	35,798	84	936	11,688	241,784	11,412	238,383	276	3,401	521	22,323
64	926,864	725,215	183,663	17,986	4,911	78,047	1,432	37,834	3,383	39,181	96	1,032	9,915	251,699	9,675	248,058	240	3,641	462	22,785
65	921,953	714,108	189,733	18,112	5,534	83,581	1,980	39,814	3,445	42,626	109	1,141	7,961	259,660	7,764	255,822	197	3,838	353	23,138
66	916,419	704,364	193,896	18,159	6,181	89,762	2,469	42,283	3,589	46,215	123	1,264	6,041	265,701	5,889	261,711	152	3,990	293	23,431
67	910,238	696,006	196,055	18,177																

Table E: Probabilities of Disability, Death, and Survival for Insured Workers Attaining Age 20 in 2018 (1998 Birth Cohort)

	Males Attaining Age 20 in 2018					Females Attaining Age 20 in 2018				
Age *x*	Probability of Survival With No Disability From Age 20 To Age *x*	Probability of Disability From Age 20 To Age *x*	Probability of Death While Never Disabled From Age 20 To Age *x*	Probability of Death or Disability From Age 20 To Age *x*	Age *x*	Probability of Survival With No Disability From Age 20 To Age *x*	Probability of Disability From Age 20 To Age *x*	Probability of Death While Never Disabled From Age 20 To Age *x*	Probability of Death or Disability From Age 20 To Age *x*
21	99.7	0.2	0.1	0.3	21	99.8	0.2	0.0	0.2
22	99.3	0.5	0.2	0.7	22	99.6	0.3	0.1	0.4
23	99.0	0.7	0.3	1.0	23	99.4	0.5	0.1	0.6
24	98.6	1.0	0.4	1.4	24	99.2	0.6	0.2	0.8
25	98.2	1.3	0.5	1.8	25	99.0	0.8	0.2	1.0
26	97.9	1.5	0.7	2.1	26	98.8	1.0	0.2	1.2
27	97.6	1.7	0.8	2.4	27	98.6	1.1	0.3	1.4
28	97.3	1.8	0.9	2.7	28	98.4	1.3	0.3	1.6
29	97.0	2.0	1.0	3.0	29	98.2	1.4	0.4	1.8
30	96.6	2.2	1.1	3.4	30	98.0	1.6	0.4	2.0
31	96.3	2.4	1.3	3.7	31	97.7	1.8	0.5	2.3
32	96.0	2.7	1.4	4.0	32	97.5	2.0	0.5	2.5
33	95.6	2.9	1.5	4.4	33	97.2	2.2	0.6	2.8
34	95.2	3.1	1.6	4.8	34	96.9	2.5	0.7	3.1
35	94.9	3.4	1.7	5.1	35	96.6	2.7	0.7	3.4
36	94.5	3.7	1.9	5.5	36	96.2	3.0	0.8	3.8
37	94.1	3.9	2.0	5.9	37	95.8	3.3	0.8	4.2
38	93.7	4.2	2.1	6.3	38	95.4	3.7	0.9	4.6
39	93.2	4.6	2.2	6.8	39	95.0	4.0	0.9	5.0
40	92.8	4.9	2.3	7.2	40	94.6	4.4	1.0	5.4
41	92.3	5.3	2.4	7.7	41	94.2	4.8	1.1	5.8
42	91.8	5.6	2.6	8.2	42	93.7	5.2	1.1	6.3
43	91.3	6.0	2.7	8.7	43	93.2	5.6	1.2	6.8
44	90.8	6.5	2.8	9.2	44	92.7	6.1	1.3	7.3
45	90.2	6.9	2.9	9.8	45	92.1	6.6	1.3	7.9
46	89.6	7.4	3.0	10.4	46	91.5	7.1	1.4	8.5
47	89.0	7.9	3.2	11.0	47	90.9	7.6	1.5	9.1
48	88.3	8.4	3.3	11.7	48	90.2	8.2	1.6	9.8
49	87.6	8.9	3.5	12.4	49	89.5	8.8	1.7	10.5
50	86.8	9.5	3.7	13.2	50	88.8	9.4	1.8	11.2
51	86.0	10.2	3.9	14.0	51	88.0	10.1	1.9	12.0
52	84.9	11.0	4.1	15.1	52	87.0	11.0	2.0	13.0
53	83.9	11.8	4.3	16.1	53	86.0	11.9	2.2	14.0
54	82.8	12.7	4.5	17.2	54	85.0	12.7	2.3	15.0
55	81.7	13.5	4.8	18.3	55	83.9	13.6	2.4	16.1
56	80.4	14.5	5.0	19.6	56	82.8	14.6	2.6	17.2
57	79.0	15.7	5.3	21.0	57	81.5	15.7	2.8	18.5
58	77.5	16.9	5.6	22.5	58	80.2	16.9	2.9	19.8
59	76.0	18.2	5.9	24.0	59	78.9	18.0	3.1	21.1
60	74.4	19.4	6.2	25.6	60	77.6	19.2	3.2	22.4
61	72.8	20.8	6.4	27.2	61	76.4	20.3	3.3	23.6
62	71.1	22.2	6.7	28.9	62	75.1	21.5	3.4	24.9
63	69.4	23.7	6.9	30.6	63	73.8	22.7	3.5	26.2
64	67.8	25.1	7.2	32.2	64	72.5	23.8	3.6	27.5
65	66.3	26.2	7.4	33.7	65	71.4	24.8	3.8	28.6
66	65.2	27.1	7.7	34.8	66	70.4	25.6	4.0	29.6
67	64.2	27.7	8.1	35.8	67	69.6	26.2	4.2	30.4

Note: Totals do not necessarily equal the sums of rounded components.