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## MORTALITY EXPERIENCE OF DI DISABLED WORKERS AND SSI DISABLED ADULTS WITH HIV-RELATED IMPAIRMENTS, 2002-06

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### *Introduction*

The first awards from the Social Security Disability Insurance (DI) and Supplemental Security Income (SSI) programs to persons disabled by Acquired Immunodeficiency Syndrome (AIDS) were made in 1982. Since that time, the Social Security Administration has monitored the magnitude of HIV-related DI and SSI disabled adult program expenditures and made projections of future expenditures.

These expenditures are a function of the numbers of persons disabled by Human Immunodeficiency Virus (HIV) and the length of time they remain on the rolls. Because death is the primary reason for termination of benefits payable to HIV beneficiaries, their mortality more-or-less determines the amount of time spent on the rolls. This actuarial note focuses on our most recent examination of DI and SSI administrative records consisting of about 881,000 life-years of exposure of HIV-related cases during the 5-year period 2002-06.

For comparison, we also include selected results from Actuarial Note *Death Termination Experience for DI Disabled Workers and SSI Disabled Adults with HIV-Related Impairments* (June 2005).<sup>1</sup> This prior study examined HIV experience over two separate 5-year periods: 1992-96 and 1997-2001. The current study uses the same methods as the prior study, the details of which are presented in **Appendix A**.

### *SSA History of HIV Identification*

The agency's collection of administrative data that provide the basis for this study was developed over time. As the medical world gained a greater understanding of the effects of HIV on diverse body systems, SSA also progressed in evaluating disability claims based on the presence of the infection.

The *SSA-831* is the record of a disability determination by the State Disability Determinations Services. On this record, the adjudicator enters the primary and secondary diagnoses and numerical codes. The primary diagnosis specifies the principal disabling condition. The secondary diagnosis is generally the condition next in severity, and allows us to identify additional cases where HIV is a contributing (if not the primary) reason for impairment. For the most part, the beneficiaries in our HIV database have been identified from these codes.

However in the early years of the epidemic, there were no codes specific for HIV. The oldest cases in our database were identified by manually examining claims folders when the diagnosis was one that might be HIV-related. This slow manual process could not accommodate the explosion of HIV cases. Accordingly, the administration selected a set of diagnoses where—based on experiences of the manual process—HIV was likely to be involved. Infected persons who filed for benefits as a result of impairments related to general immune deficiency, or two diseases in particular—*Kaposi's sarcoma* and *pneumocystis carinii pneumonia*—were among the first to receive an HIV-related diagnosis.

In the Ninth Revision of the International Classification of Diseases, effective 1987, the World Health Organization established ICD series 042.0-044.9 specifically for HIV-related diseases,<sup>2</sup> and SSA followed with a corresponding series of impairment codes. As a result, the collection of data shifted to identifying new cases using the now-familiar HIV diagnosis codes of 042, 043, and 044, while continuing to track the experience of HIV cases that had been identified under prior evaluations.

Since 1990, our process for collecting HIV data has remained relatively unchanged. Every six months, administrative data on previously identified cases is updated, and newly-identified HIV beneficiaries are added to the data collection. Code 043 may be used as the primary or secondary diagnosis code where symptomatic HIV infection is accompanied by symptoms reasonably assumed to be related to the infection. Code 044 is used when asymptomatic HIV is involved either as a primary or secondary reason for allowance. Code 042 was used primarily for cases involving AIDS and AIDS-related Complex; beginning in December 2004, 042 became associated with neoplastic malignancies and is no longer used to identify HIV-related impairments.

### *Evaluation and Early Projections*

In addition to changes in the way we have collected data on HIV cases, the standards used to evaluate HIV disability claims have also changed over time. In the early years of the virus, SSA remained consistent with the identification process set forth by the Centers for Disease Control and Prevention (CDC) and World Health Organization. As the epidemic pro-

<sup>1</sup> See Actuarial Note #146 at [www.ssa.gov/OACT/NOTES/n2000s.html](http://www.ssa.gov/OACT/NOTES/n2000s.html) for details.

<sup>2</sup> The ICD series was converted under Tenth Revision to B20-B24, effective 1998. The ninth revision remains the basis for SSA HIV codes.

gressed in severity, the agency found it necessary to define its own guidelines for evaluating HIV-related impairments in order to administer the DI and SSI programs.

A broader knowledge of the infection made it clear that some progressive and seriously disabling conditions were not included in the early definition of AIDS. Clinicians began to identify a group of individuals with a variety of signs and symptoms which were thought to be caused by the virus. The collection of these symptoms came to be known as *AIDS-Related Complex (ARC)*.<sup>3</sup> Effective September 1987, the CDC began using revised criteria for determining which cases involving HIV should be reported for AIDS statistical surveillance purposes. The revision expanded the definition to include HIV Dementia and Wasting. To remain consistent, SSA revised its definition for AIDS, but discontinued the automatic link with the CDC definition. The revised criteria led to reclassifying as AIDS a number of then-current beneficiaries who were on the disability rolls due to ARC, rather than a definitively diagnosed case of AIDS. This contributed to the number of AIDS-related impairments on the DI rolls which grew rapidly from 5,700 at the end of 1986 to 17,400 by the end of 1988.

In 1990, SSA re-issued guidelines to include criteria for symptomatic HIV, including all lymphomas and other disease manifestations coupled with 200 CD4 count and marked functional limitations. The expanded guidelines more clearly defined the aspects of disability for individuals who had HIV, but had not progressed to the point of having AIDS and resulted in a new class of HIV impairments. By 1992, the DI program had experienced its most critical year for new HIV entitlements as an additional 33,000 workers began receiving payments. By the end of the year there were 61,000 AIDS-related impairments on the DI rolls. In June 1993 HIV was split out from the *infectious/parasitic* category and received its own regulatory listing in the *Listing of Impairments*.<sup>4</sup>

Around this time, with the epidemic seemingly out of control, actuarial models predicted that the number of DI disabled workers with HIV/AIDS would more than double by 1999 to 131,000—including 60,000 new entitlements in that year alone—and annual benefit payments would rise to \$1.3 billion. Although the rolls did experience an elevated number of HIV awards through 1996, the effects were somewhat muted since HIV mortality was so high that monthly benefit payments were often made only for a relatively short period of time, if at all. Many never received payments, failing to survive the required 5-month waiting period under the DI pro-

<sup>3</sup> A group of common complications found in early stage HIV infection was categorized as AIDS-Related Complex. Individuals may have exhibited serious impairments that were reasonably assumed to be related to the infection, but did not have a definitively diagnosed case of AIDS. Symptoms include unexplained chronic deficiency of white blood cells, poorly functioning lymphatic system, fungus infection of the mouth, herpes, recurrent fever, prolonged diarrhea, or presence of HIV antibodies.

<sup>4</sup> Refer to **Appendix B** for an overview of the definition of disability and the determination process.

gram. One-third of those who made it onto the rolls had died by the end of the calendar year in which they became entitled; two-thirds had died by the end of the following year. As it turned out, by 1999, the DI program paid an estimated \$900 million in benefits to about 95,000 HIV beneficiaries—including 11,500 new entitlements in that year. Recent data indicate that in 2011, an estimated \$1.8 billion in DI benefits was paid to roughly 137,000 HIV beneficiaries—including 10,000 new entitlements. An additional 55,900 received an estimated \$528 million in Federal SSI-only payments.<sup>5</sup>

### *HIV/AIDS Mortality Experience*

The experience covered in this study is not comparable to the mortality experience of the HIV/AIDS population being monitored by CDC.<sup>6</sup> The number of individuals awarded DI or SSI disability benefits based at least in part on HIV infection, is only a fraction of those diagnosed. In essence, we study persons for whom the infection has progressed to the point of being disabling. Many others remain in the work force for an extended period of time and may never file a claim. Still others may lack insured status or have excess income or resources, which preclude them from receiving benefits. So on average, disabled beneficiaries with HIV impairments will be less healthy than the HIV population tracked by CDC. Also, while CDC measures mortality from the point of diagnosis, our study measures it from the date of entitlement to benefits. In general, these two dates are likely to be very different.

### *Summary of HIV Experience (1992-96)*<sup>7</sup>

CDC tracking shows that AIDS incidence in the general population peaked in 1993, and the estimated number of deaths among persons with AIDS increased steadily through 1994. During 1992-96, there were approximately 143,000 new HIV beneficiaries and 145,700 death terminations from the DI and SSI rolls. The number of beneficiaries that appeared on the disability rolls with HIV as the primary diagnosis for impairment was greater than those for whom HIV was a secondary diagnosis by a ratio of 10-to-1. The ratio of *symptomatic* HIV to *asymptomatic* HIV cases was roughly 6-to-1. Data suggest that cases having HIV impairment as the primary diagnosis, or symptomatic HIV diagnosis exhibit inherently higher mortality than cases having secondary or asymptomatic HIV diag-

<sup>5</sup> Estimates from memorandums *Estimated Number of DI Beneficiaries and Amount of Benefit Payments Due to HIV/AIDS* (Zayatz, July 2012), and *Estimated Impact of the HIV Pandemic on Federal SSI Payments and Federally Administered SSI Caseloads* (Moroz, July 2012).

<sup>6</sup> For further insight, refer to the CDC annual *HIV Surveillance Report* at [www.CDC.gov](http://www.CDC.gov) website. CDC provides annual compilations of State HIV surveillance data and Federally mandated AIDS reports. This national report on cases of HIV infection and AIDS in the United States is used by CDC's public health partners and professionals in other Federal agencies, health departments, and academic institutions.

<sup>7</sup> The first person-based mortality study of HIV beneficiaries covered two separate 5-year periods: 1992-96 and 1997-2001. For a complete discussion on these earlier periods, refer to Actuarial Note #146 *Death Termination Experience for DI Disabled Workers and SSI Disabled Adults with HIV-Related Impairments* (Barrick and Zayatz, June 2005) [www.ssa.gov/OACT/NOTES/n2000s.html](http://www.ssa.gov/OACT/NOTES/n2000s.html)

nosis. These factors had a significant impact on HIV disability with regard to the number of new entitlements, the amount of time spent on the rolls, and the number of deaths.

### **Summary of HIV Experience (1997-2001)**

By 1996, CDC began reporting sharp declines in AIDS incidence as a result of public awareness and widespread use of *highly-active antiretroviral therapy* (HAART) which slows the reproduction of the virus and the progression of HIV infection to AIDS. By 1998, CDC reported a leveling of incidence and essentially no change from 1999 to 2001 with roughly 41,000 new AIDS cases reported nationally each year over that period. DI entitlements followed the decline in population incidence as infected workers remained employed for longer periods of time. Since peaking at 33,000 in 1992, the number of workers becoming entitled to DI benefits based on HIV fell to roughly 11,000 annually by 2001. During 1997-01, there were approximately 59,000 new HIV beneficiaries and 58,400 death terminations from the DI and SSI rolls.

Dramatic differences in mortality emerged during this period. When compared to the earlier 5-year period, HIV mortality among males for 1997-2001 was 50-70 percent lower for early durations, and 25-50 percent lower for later durations. Similar declines occurred among females.

Much of the decline in mortality experience among DI and SSI recipients appears to be consistent with the wider use of HAART and, to a lesser extent, differences in the composition of the rolls—that is, compared to the 1992-96 period, the distribution of primary-to-secondary diagnosis dropped to less than 7-to-1; and the ratio of symptomatic-to-asymptomatic cases dropped to 4-to-1.

### **HIV Experience (2002-06)**

This study is dedicated to HIV mortality experience for the DI and SSI rolls over the period 2002-06. CDC reported that there were 442,000 persons living with AIDS in the U.S. as of the end of 2006; an estimated 36,000 new cases occurred nationally that year (roughly 12.1 per 100,000 population). From the beginning of the epidemic through 2006, CDC estimates that 976,300 cases had been diagnosed and 547,600 persons had died with AIDS in the U.S.<sup>8</sup>

SSA records indicate that there were 121,000 HIV worker beneficiaries on the DI rolls at the end of 2006, with an estimated 54,000 new entitlements occurring over 2002-06.<sup>9</sup> Additionally, an estimated 53,300 individuals were receiving SSI benefits because of the virus.<sup>10</sup> Over the same period, the DI and SSI rolls experienced approximately 52,700 death ter-

minations of HIV beneficiaries. Note that deaths of persons with a diagnosis of HIV infection may be due to any cause (that is, may or may not be related to HIV).

Major findings of this study include:

**AIDS mortality is high.** Compared to the experience of DI workers overall for the period 2001-05, HIV mortality is 50 to 200 percent higher at most attained ages for males, and 100 to 300 percent higher for females.<sup>11</sup> We do, however, continue to see improvement. Compared to our last study of HIV mortality over the period 1997-2001, the probability of death among males for 2002-06 is 22 percent lower on average for durations 0-5 and 14 percent lower for durations 6-10. For females, the average reduction ranges from 20 percent in earlier durations to 5 percent in later durations.

**Gender differences are less distinct.** The familiar female advantage in mortality is very slight among HIV beneficiaries. In fact, female mortality is higher than males for about 40 percent of all attained ages. In the general disability population, this occurs less than 3 percent of the time.

**Demographic factors are less evident.** In general, a disabled beneficiary's attained age largely influences mortality in later durations. The smooth age gradient that is noticeable in the overall disability population is not evident among the HIV population, which shows much fluctuation from one duration to the next. We suspect this behavior is influenced by the fact that we simply don't know how long individuals have been infected or the degree of therapy that has been received.

**Mortality among SSI recipients is likely worse.** The combined DI/SSI mortality experience is worse than the DI mortality experience. This likely reflects a socioeconomic differential in mortality, considering that the SSI program is means-tested. In particular, some low-income persons may lack the means to obtain medical treatment that would improve their prognosis.

### **List of Tables**

The data are presented in a set of comprehensive tables, in which various measures of mortality and survival are given for ages 18 to 65 and durations 0 to 10. In cells where the data are sparse, particularly for the younger ages, the values are subject to significant random fluctuation. Where the data are very sparse, we sought to mitigate the problem by using blending and graduation techniques.

**Table 1A** and **Table 1B** show probabilities of death for male and female disabled beneficiaries with HIV-related impairments, by *select age* and *duration* since entitlement. Results

<sup>8</sup> *HIV Surveillance Report* (2009, Vol.21) [www.CDC.gov](http://www.CDC.gov)

<sup>9</sup> Totals include beneficiaries concurrently entitled to DI and SSI benefits, but do not include beneficiaries entitled to SSI only.

<sup>10</sup> Total includes SSI-only recipients, as well as a small percentage entitled only to Federally administered State Supplementary SSI payments.

<sup>11</sup> Findings are based on comparisons with overall disability mortality tabulated for the period 2001-05 in Actuarial Study #122: *Social Security Disability Insurance Program Worker Experience* (Zayatz, May 2011) [www.ssa.gov/OACT/NOTES/actstud.html](http://www.ssa.gov/OACT/NOTES/actstud.html)

are based on the combined experience of the DI and SSI rolls from January 1, 2002 through December 31, 2006. The probability of death among HIV beneficiaries is generally highest within the first several durations.

**Table 2A** and **Table 2B** show the number of survivors remaining at different durations from cohorts becoming entitled at various ages. These tables are based on the probabilities of death shown in tables 1A and 1B. These *survival tables* make it easy to calculate the probabilities of surviving a given number of years. **Appendix A** provides details on table construction and usage.

**Table 3A** and **Table 3B** show the expected future lifetime of HIV- disabled beneficiaries, based on the survivorship experience shown in tables 2A and 2B. Life expectancy is greater in the second year of entitlement than in the first year because of higher mortality during the first year on the rolls.

**Table 4** shows the aggregate probability of death and expected future lifetime, by *select* age. **Table 5** shows the aggregate probability of death and expected future lifetime, by *attained* age. Probabilities are based on aggregate counts of exposure and deaths across all durations. They represent the average probability of death within the next year for those originally entitled at a particular select age, or who have attained a particular age, respectively.

Similarly, expected future lifetime represents the average life expectancy of those who share a particular select or attained age, respectively. Values are exposure-weighted averages of the select-and-ultimate future lifetimes shown in tables 3A and 3B and may be used as a general indication of the overall average future lifetime of a particular entitlement cohort (table 4), or a group of beneficiaries from various entitlement cohorts who have attained a particular age (table 5).

**Table 6** shows the aggregate probability of death and expected future lifetime, by *duration* (years since selection). Probabilities are based on aggregate counts of exposure and deaths across all select ages, and represent the average probability of death within the next year for persons entitled a given number of years. Similarly, aggregate future lifetime represents the average life expectancy of those who have been entitled for a given number of years.

**Table 7A** and **Table 7B** show probabilities of death for male and female DI disabled worker beneficiaries with HIV-related impairments, by select age and duration. These tables are similar to tables 1A and 1B, except that the experience of persons receiving only SSI is excluded.

**Table 1A.—Male HIV Disabled Beneficiaries**  
**Probability of Death**  
(2002-06 Social Security DI and SSI disability experience)

Select age	Duration of disability										Attained age	
	0	1	2	3	4	5	6	7	8	9		10 or more
18	0.055509	0.037061	0.054067	0.055814	0.065145	0.048411	0.048780	0.045194	0.053645	0.033750	0.045400	28
19	0.059903	0.035490	0.100129	0.057862	0.062922	0.050970	0.048916	0.047291	0.051992	0.031937	0.022014	29
20	0.071155	0.055305	0.039738	0.062972	0.083482	0.066295	0.067806	0.045517	0.047476	0.025631	0.035242	30
21	0.079667	0.060704	0.044121	0.077018	0.058749	0.044992	0.034871	0.081074	0.059387	0.019768	0.039110	31
22	0.095358	0.033053	0.070710	0.076800	0.066504	0.060397	0.070348	0.044438	0.030355	0.020172	0.047128	32
23	0.072172	0.038370	0.036554	0.078370	0.029982	0.054852	0.029688	0.043150	0.074493	0.052957	0.032759	33
24	0.090011	0.036479	0.053657	0.064651	0.040818	0.059312	0.072768	0.025423	0.049032	0.053107	0.036010	34
25	0.070683	0.046214	0.045917	0.055969	0.046284	0.045005	0.048090	0.049978	0.061842	0.056096	0.039988	35
26	0.091355	0.071033	0.038773	0.088235	0.060869	0.052462	0.077996	0.059661	0.060642	0.049038	0.048127	36
27	0.084392	0.073865	0.041913	0.046824	0.046652	0.041965	0.059524	0.063190	0.047173	0.040441	0.045723	37
28	0.079582	0.048256	0.040292	0.058688	0.063965	0.061718	0.051694	0.062045	0.046108	0.043607	0.049432	38
29	0.089556	0.058827	0.060484	0.041451	0.041795	0.056812	0.037491	0.056788	0.054250	0.050189	0.048329	39
30	0.091635	0.053631	0.066803	0.053307	0.047684	0.054559	0.050274	0.047107	0.050662	0.045180	0.044542	40
31	0.082457	0.050746	0.064276	0.047769	0.049300	0.050655	0.040094	0.047415	0.049781	0.050436	0.046253	41
32	0.099446	0.056715	0.051925	0.058324	0.054146	0.059649	0.047721	0.054565	0.051220	0.050931	0.048882	42
33	0.070481	0.055483	0.048211	0.046657	0.044381	0.046010	0.045877	0.055980	0.049785	0.055555	0.046508	43
34	0.089667	0.066071	0.058029	0.052660	0.046464	0.051125	0.051205	0.045025	0.052323	0.045030	0.049541	44
35	0.085181	0.049860	0.050982	0.045210	0.041020	0.050929	0.044000	0.038404	0.047448	0.055212	0.052077	45
36	0.095964	0.061127	0.041867	0.044526	0.044698	0.050482	0.057612	0.048980	0.051502	0.047997	0.056123	46
37	0.090141	0.058290	0.056691	0.048226	0.045603	0.054242	0.052541	0.052483	0.050407	0.050196	0.051327	47
38	0.091848	0.061768	0.059016	0.048006	0.059083	0.054176	0.055943	0.053961	0.049918	0.054108	0.053227	48
39	0.094650	0.067983	0.057582	0.054107	0.046017	0.051519	0.053089	0.052793	0.053907	0.053448	0.062562	49
40	0.096345	0.062359	0.049513	0.048160	0.051376	0.056154	0.051305	0.061288	0.055363	0.053992	0.054058	50
41	0.086491	0.057167	0.047799	0.064144	0.056353	0.052493	0.047738	0.051212	0.052086	0.055478	0.066772	51
42	0.097786	0.066495	0.049962	0.055255	0.049306	0.057743	0.055760	0.057324	0.061198	0.059274	0.060506	52
43	0.099711	0.060331	0.057729	0.066766	0.062888	0.050879	0.049738	0.055915	0.049591	0.053559	0.062943	53
44	0.104485	0.063040	0.055125	0.054645	0.047259	0.066343	0.058139	0.060440	0.053218	0.053725	0.062211	54
45	0.102820	0.070756	0.068807	0.055686	0.057626	0.061364	0.066225	0.046791	0.068275	0.061370	0.061794	55
46	0.111486	0.071493	0.063571	0.061937	0.055747	0.070952	0.052653	0.066815	0.048954	0.084540	0.068210	56
47	0.103569	0.067852	0.059230	0.058191	0.061243	0.065336	0.071582	0.052929	0.065109	0.051244	0.060865	57
48	0.122092	0.071290	0.074915	0.065201	0.063656	0.082723	0.058663	0.055093	0.067406	0.059536	0.063450	58
49	0.103708	0.069250	0.054307	0.057983	0.077923	0.055501	0.053602	0.061886	0.075328	0.054113	0.065848	59
50	0.088196	0.078983	0.064291	0.072572	0.062400	0.059917	0.081395	0.055318	0.075513	0.056857	0.063488	60
51	0.097363	0.075184	0.060330	0.077246	0.040898	0.071251	0.047938	0.061448	0.042333	0.046309	0.078457	61
52	0.105379	0.072623	0.066649	0.062859	0.064628	0.064856	0.072930	0.064394	0.064333	0.090460	0.063092	62
53	0.107676	0.086827	0.068564	0.074009	0.062381	0.066867	0.066888	0.078179	0.071626	0.063777	0.059658	63
54	0.122498	0.077065	0.074690	0.074832	0.070012	0.074442	0.073659	0.060903	0.054870	0.053791	0.081304	64
55	0.094325	0.066952	0.050282	0.059098	0.052385	0.067406	0.062461	0.062507	0.058518	0.090090	0.087985	65
56	0.101757	0.063547	0.068866	0.042534	0.059064	0.049505	0.072377	0.056982	0.082841	0.068675	0.084138	66
57	0.125946	0.066558	0.061802	0.074625	0.074631	0.060938	0.079049	0.054633	0.063971	0.095491	0.076197	67
58	0.129557	0.065984	0.077713	0.079196	0.061235	0.054746	0.063930	0.071793	0.106285	0.091480	0.109397	68
59	0.111048	0.081744	0.048357	0.088571	0.024375	0.044253	0.061758	0.071998	0.094261	0.065001	0.073719	69
60	0.113488	0.102392	0.071386	0.099030	0.059597	0.087845	0.074906	0.054336	0.064115	0.104369	0.089735	70
61	0.107345	0.096382	0.059353	0.066111	0.067382	0.074934	0.104302	0.068960	0.087032	0.084433	0.083454	71
62	0.162060	0.117151	0.077356	0.118175	0.050927	0.099152	0.091775	0.062751	0.069735	0.099486	0.120052	72
63	0.122961	0.096738	0.076440	0.073760	0.078972	0.082609	0.080692	0.074753	0.078192	0.093415	0.087439	73
64	0.145755	0.096671	0.086059	0.079486	0.084137	0.087677	0.082251	0.076579	0.078106	0.094568	0.084893	74
65	0.185939	0.108336	0.093602	0.078180	0.089074	0.093718	0.083585	0.078727	0.078030	0.095046	0.098152	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value  $q_{[x]+t}$  at duration  $t$  represents the probability of death—in a multiple-decrement environment—during the  $(t+1)$  year of entitlement for those originally entitled to disability benefits at select age  $[x]$  who have attained age  $[x]+t$ .
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Where the data are very sparse, particularly for some very young and very old select ages, results are estimated using blending techniques and Whittaker-Henderson Type B two-dimensional graduation to mitigate the problem. See **Appendix A, Section E.** for details.

**Table 1B.—Female HIV Disabled Beneficiaries  
Probability of Death**  
(2002-06 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.053494	0.050820	0.031174	0.021271	0.036138	0.046017	0.038309	0.032346	0.037827	0.028801	0.025416	28
19	0.059786	0.055410	0.047283	0.032933	0.042042	0.047967	0.042804	0.037651	0.041087	0.036683	0.030416	29
20	0.051984	0.055690	0.109203	0.033894	0.034847	0.061927	0.045986	0.042967	0.046559	0.062046	0.053819	30
21	0.079228	0.056842	0.064087	0.065153	0.068027	0.085179	0.094142	0.077272	0.083333	0.075446	0.023227	31
22	0.087000	0.092452	0.081754	0.058488	0.053644	0.064360	0.052431	0.051414	0.061781	0.018851	0.036350	32
23	0.071794	0.091443	0.083984	0.087805	0.044206	0.029078	0.035243	0.072329	0.024583	0.068019	0.040889	33
24	0.066242	0.087055	0.078822	0.052882	0.050563	0.060716	0.019237	0.031569	0.038163	0.028760	0.035800	34
25	0.070935	0.069283	0.077632	0.066753	0.057786	0.033665	0.044713	0.046498	0.035902	0.046296	0.039559	35
26	0.095728	0.071141	0.052233	0.088874	0.036816	0.045444	0.055339	0.050919	0.053269	0.046781	0.039258	36
27	0.083149	0.081610	0.053838	0.033548	0.063107	0.036896	0.032622	0.036501	0.050076	0.044421	0.039619	37
28	0.084187	0.069648	0.063062	0.051320	0.042932	0.067971	0.040623	0.051658	0.059811	0.053337	0.046386	38
29	0.077461	0.084692	0.074943	0.041169	0.048317	0.048268	0.053334	0.029681	0.047772	0.048395	0.040579	39
30	0.084094	0.090391	0.056706	0.065843	0.059506	0.051988	0.032336	0.057773	0.032844	0.048620	0.052198	40
31	0.104343	0.073286	0.056760	0.058885	0.045380	0.048963	0.060031	0.043688	0.046267	0.049580	0.047566	41
32	0.091742	0.085138	0.059542	0.054802	0.044059	0.055721	0.048717	0.057457	0.068614	0.063496	0.047653	42
33	0.087632	0.075350	0.055410	0.033306	0.047736	0.053411	0.059107	0.057566	0.059275	0.048374	0.046430	43
34	0.112057	0.071892	0.072702	0.058043	0.048773	0.052628	0.054441	0.054224	0.054094	0.036514	0.058223	44
35	0.086664	0.084859	0.052871	0.059998	0.061920	0.041124	0.046034	0.067797	0.063766	0.038784	0.055828	45
36	0.100282	0.084339	0.066039	0.045494	0.043196	0.058952	0.049894	0.043952	0.044485	0.055659	0.054885	46
37	0.094972	0.075604	0.057048	0.058860	0.055540	0.048770	0.065511	0.061455	0.058140	0.071276	0.060960	47
38	0.100442	0.067358	0.065592	0.055683	0.059327	0.060744	0.058519	0.055709	0.047234	0.060516	0.057564	48
39	0.083847	0.074114	0.067836	0.067065	0.045769	0.050755	0.037005	0.045967	0.051728	0.080435	0.057065	49
40	0.094618	0.077406	0.061290	0.050575	0.045932	0.046572	0.052472	0.057006	0.061928	0.071966	0.064881	50
41	0.083303	0.074942	0.048242	0.053374	0.054431	0.056714	0.040135	0.056447	0.061202	0.062899	0.047403	51
42	0.085775	0.070800	0.065460	0.050511	0.051716	0.061566	0.056910	0.086359	0.063222	0.078476	0.065672	52
43	0.099012	0.069599	0.066876	0.045566	0.051440	0.046474	0.044981	0.058389	0.049940	0.064795	0.055988	53
44	0.076644	0.060572	0.058994	0.040992	0.052801	0.059669	0.053070	0.055155	0.045116	0.046545	0.056223	54
45	0.092540	0.054650	0.044539	0.048342	0.040483	0.049153	0.068523	0.067862	0.066521	0.040308	0.056357	55
46	0.076814	0.053155	0.050167	0.052856	0.080712	0.046934	0.057117	0.049221	0.063880	0.039763	0.057400	56
47	0.087929	0.066444	0.060730	0.057733	0.057066	0.063148	0.050733	0.052711	0.061063	0.030279	0.058195	57
48	0.110667	0.075231	0.073632	0.050216	0.060872	0.047403	0.048509	0.070635	0.063504	0.065370	0.055860	58
49	0.087061	0.058036	0.047325	0.073918	0.049303	0.041589	0.040607	0.066967	0.040416	0.057587	0.044744	59
50	0.072817	0.047934	0.054119	0.058493	0.040652	0.040712	0.050162	0.051330	0.080464	0.048233	0.052598	60
51	0.090323	0.062551	0.057308	0.058875	0.032394	0.052712	0.071898	0.062062	0.090751	0.065122	0.049873	61
52	0.097828	0.068897	0.057092	0.041525	0.041606	0.030463	0.036121	0.096849	0.064026	0.055030	0.053573	62
53	0.106870	0.068065	0.043195	0.082001	0.043271	0.035772	0.059599	0.086133	0.050500	0.059137	0.067969	63
54	0.073022	0.057820	0.054538	0.077175	0.088232	0.006846	0.036555	0.068470	0.069581	0.058711	0.048789	64
55	0.098708	0.054991	0.040240	0.076320	0.060048	0.075809	0.077990	0.098775	0.055556	0.055206	0.036723	65
56	0.105391	0.061079	0.079496	0.063443	0.040186	0.009949	0.011033	0.059242	0.015625	0.054701	0.053617	66
57	0.120054	0.063861	0.022807	0.042669	0.039150	0.044548	0.045945	0.038422	0.065779	0.055185	0.048186	67
58	0.092656	0.056665	0.062455	0.054759	0.036805	0.042784	0.152827	0.064767	0.051059	0.056124	0.065125	68
59	0.072051	0.033907	0.026420	0.051020	0.024158	0.054727	0.083717	0.050050	0.037722	0.055929	0.050839	69
60	0.109071	0.074278	0.080156	0.039904	0.027457	0.031636	0.051273	0.062693	0.045337	0.055876	0.051819	70
61	0.094987	0.065419	0.066867	0.074102	0.041009	0.048414	0.052565	0.062669	0.044693	0.055237	0.040185	71
62	0.078498	0.060780	0.053275	0.051190	0.056054	0.042393	0.049258	0.061047	0.045446	0.054105	0.076671	72
63	0.090952	0.075117	0.056282	0.053852	0.047037	0.043291	0.047470	0.058997	0.047004	0.052561	0.053139	73
64	0.121349	0.091023	0.066011	0.058383	0.055521	0.057769	0.058086	0.060182	0.064374	0.066680	0.086304	74
65	0.152260	0.107198	0.074336	0.063778	0.060473	0.063927	0.064677	0.062670	0.074328	0.075919	0.078385	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value  $q_{[x]+t}$  at duration  $t$  represents the probability of death—in a multiple-decrement environment—during the  $(t+1)$  year of entitlement for those originally entitled to disability benefits at select age  $[x]$  who have attained age  $[x]+t$ .
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Where the data are very sparse, particularly for some very young and very old select ages, results are estimated using blending techniques and Whittaker-Henderson Type B two-dimensional graduation to mitigate the problem. See **Appendix A, Section E**, for details.

**Table 2A.—Male HIV Disabled Beneficiaries**  
**Survival Table**  
(2002-06 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	100,000	94,449	90,949	86,032	81,230	75,938	72,262	68,737	65,631	62,110	60,014	28
19	100,774	94,737	91,375	82,226	77,468	72,594	68,894	65,524	62,425	59,179	57,289	29
20	100,416	93,271	88,113	84,612	79,284	72,665	67,848	63,247	60,368	57,502	56,028	30
21	96,418	88,737	83,350	79,673	73,537	69,217	66,103	63,798	58,626	55,144	54,053	31
22	93,491	84,576	81,781	75,998	70,161	65,495	61,539	57,210	54,668	53,009	51,939	32
23	83,730	77,687	74,706	71,975	66,334	64,345	60,816	59,010	56,464	52,258	49,491	33
24	84,009	76,447	73,658	69,706	65,199	62,538	58,829	54,548	53,161	50,554	47,870	34
25	79,249	73,647	70,243	67,018	63,267	60,339	57,623	54,852	52,111	48,888	46,146	35
26	86,891	78,953	73,345	70,501	64,280	60,367	57,200	52,739	49,593	46,586	44,301	36
27	74,014	67,768	62,762	60,131	57,315	54,641	52,348	49,232	46,121	43,945	42,169	37
28	71,351	65,673	62,504	59,986	56,466	52,854	49,592	47,028	44,110	42,076	40,241	38
29	67,256	61,233	57,631	54,145	51,901	49,732	46,907	45,148	42,584	40,274	38,252	39
30	64,898	58,951	55,789	52,062	49,287	46,937	44,376	42,145	40,160	38,125	36,403	40
31	60,188	55,225	52,423	49,053	46,710	44,407	42,158	40,468	38,549	36,630	34,782	41
32	60,662	54,629	51,531	48,855	46,006	43,515	40,919	38,966	36,840	34,953	33,173	42
33	53,746	49,958	47,186	44,911	42,816	40,916	39,033	37,242	35,157	33,407	31,551	43
34	53,446	48,654	45,439	42,802	40,548	38,664	36,687	34,808	33,241	31,502	30,084	44
35	48,216	44,109	41,910	39,773	37,975	36,417	34,562	33,041	31,772	30,264	28,594	45
36	47,520	42,960	40,334	38,645	36,924	35,274	33,493	31,563	30,017	28,471	27,105	46
37	45,505	41,403	38,990	36,780	35,006	33,410	31,598	29,938	28,367	26,937	25,584	47
38	44,518	40,429	37,932	35,693	33,980	31,972	30,240	28,548	27,008	25,660	24,271	48
39	42,034	38,055	35,468	33,426	31,617	30,162	28,608	27,089	25,659	24,276	22,979	49
40	39,437	35,637	33,415	31,761	30,231	28,678	27,068	25,679	24,105	22,770	21,541	50
41	36,708	33,533	31,616	30,105	28,174	26,586	25,190	23,987	22,759	21,574	20,377	51
42	35,723	32,230	30,087	28,584	27,005	25,673	24,191	22,842	21,533	20,215	19,016	52
43	33,459	30,123	28,306	26,672	24,891	23,326	22,139	21,038	19,862	18,877	17,865	53
44	31,672	28,363	26,575	25,110	23,738	22,616	21,116	19,888	18,686	17,692	16,741	54
45	31,103	27,905	25,931	24,147	22,802	21,488	20,169	18,833	17,952	16,726	15,700	55
46	30,102	26,746	24,834	23,255	21,815	20,599	19,137	18,129	16,918	16,090	14,730	56
47	27,090	24,284	22,636	21,295	20,056	18,828	17,598	16,338	15,473	14,466	13,725	57
48	27,285	23,954	22,246	20,579	19,237	18,012	16,522	15,553	14,696	13,705	12,890	58
49	24,019	21,528	20,037	18,949	17,850	16,459	15,546	14,713	13,802	12,762	12,072	59
50	23,202	21,156	19,485	18,232	16,909	15,854	14,904	13,691	12,934	11,957	11,277	60
51	20,071	18,117	16,755	15,744	14,528	13,934	12,941	12,321	11,564	11,074	10,561	61
52	20,770	18,581	17,232	16,084	15,073	14,099	13,185	12,223	11,436	10,700	9,732	62
53	19,834	17,698	16,161	15,053	13,939	13,069	12,195	11,379	10,489	9,738	9,118	63
54	18,468	16,206	14,957	13,840	12,804	11,908	11,022	10,210	9,588	9,062	8,574	64
55	15,677	14,198	13,247	12,581	11,837	11,217	10,461	9,808	9,195	8,657	7,877	65
56	14,335	12,876	12,058	11,228	10,750	10,115	9,614	8,918	8,410	7,713	7,184	66
57	14,502	12,676	11,832	11,101	10,273	9,506	8,927	8,221	7,772	7,275	6,580	67
58	14,064	12,242	11,434	10,545	9,710	9,115	8,616	8,065	7,486	6,690	6,079	68
59	11,122	9,887	9,079	8,640	7,875	7,683	7,343	6,890	6,394	5,791	5,414	69
60	11,976	10,617	9,530	8,850	7,974	7,499	6,840	6,328	5,984	5,600	5,015	70
61	10,713	9,563	8,641	8,128	7,591	7,080	6,549	5,866	5,461	4,986	4,565	71
62	11,402	9,554	8,435	7,783	6,863	6,513	5,867	5,329	4,995	4,647	4,184	72
63	9,046	7,934	7,166	6,618	6,130	5,646	5,180	4,762	4,406	4,061	3,682	73
64	8,756	7,480	6,757	6,175	5,684	5,206	4,750	4,359	4,025	3,711	3,360	74
65	8,719	7,098	6,329	5,737	5,288	4,817	4,366	4,001	3,686	3,398	3,075	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value  $l_{[x]}$  at duration 0 represents the assumed number of lives originally entitled to disability benefits at select age  $[x]$ ; the value  $l_{[x]+t}$  at duration  $t > 0$  represents the number of lives remaining from the original  $l_{[x]}$  who have attained age  $[x]+t$ . Lives are decremented using probabilities from **Table 1A**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

**Table 2B.—Female HIV Disabled Beneficiaries**  
**Survival Table**  
(2002-06 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	100,000	94,651	89,841	87,040	85,189	82,110	78,332	75,331	72,894	70,137	68,117	28
19	104,546	98,296	92,849	88,459	85,546	81,949	78,018	74,679	71,867	68,914	66,386	29
20	113,016	107,141	101,174	90,125	87,070	84,036	78,832	75,207	71,976	68,625	64,367	30
21	132,712	122,197	115,251	107,865	100,837	93,977	85,972	77,878	71,860	65,872	60,903	31
22	113,348	103,487	93,919	86,241	81,197	76,841	71,896	68,126	64,623	60,631	59,488	32
23	107,747	100,011	90,866	83,235	75,927	72,571	70,461	67,978	63,061	61,511	57,326	33
24	93,426	87,237	79,643	73,365	69,485	65,972	61,966	60,774	58,855	56,609	54,982	34
25	93,402	86,777	80,765	74,495	69,522	65,505	63,300	60,470	57,658	55,588	53,014	35
26	94,368	85,334	79,263	75,123	68,447	65,927	62,931	59,448	56,421	53,416	50,917	36
27	83,221	76,301	70,074	66,301	64,077	60,033	57,818	55,932	53,890	51,191	48,918	37
28	85,880	78,650	73,172	68,558	65,040	62,248	58,017	55,660	52,785	49,628	46,980	38
29	79,343	73,197	66,998	61,977	59,425	56,554	53,824	50,953	49,441	47,079	44,801	39
30	78,275	71,693	65,213	61,515	57,465	54,045	51,235	49,578	46,714	45,180	42,983	40
31	74,744	66,945	62,039	58,518	55,072	52,573	49,999	46,998	44,945	42,866	40,739	41
32	74,411	67,584	61,830	58,149	54,962	52,540	49,612	47,195	44,483	41,431	38,801	42
33	67,038	61,163	56,554	53,420	51,641	49,176	46,549	43,798	41,277	38,830	36,952	43
34	66,647	59,179	54,925	50,932	47,976	45,636	43,234	40,880	38,663	36,572	35,236	44
35	61,947	56,578	51,777	49,039	46,097	43,243	41,465	39,556	36,874	34,523	33,184	45
36	57,806	52,009	47,623	44,478	42,455	40,621	38,226	36,319	34,723	33,178	31,331	46
37	57,865	52,369	48,410	45,648	42,961	40,575	38,596	36,068	33,851	31,883	29,611	47
38	53,423	48,057	44,820	41,880	39,548	37,202	34,942	32,897	31,064	29,597	27,806	48
39	48,953	44,848	41,524	38,707	36,111	34,458	32,709	31,499	30,051	28,497	26,205	49
40	46,910	42,471	39,183	36,781	34,921	33,317	31,765	30,098	28,382	26,624	24,710	50
41	42,557	39,012	36,088	34,347	32,514	30,744	29,000	27,836	26,265	24,658	23,107	51
42	44,116	40,332	37,476	35,023	33,254	31,534	29,593	27,909	25,499	23,887	22,012	52
43	38,119	34,345	31,955	29,818	28,459	26,995	25,740	24,582	23,147	21,991	20,566	53
44	34,185	31,565	29,653	27,904	26,760	25,347	23,835	22,570	21,325	20,363	19,415	54
45	33,100	30,037	28,395	27,130	25,818	24,773	23,555	21,941	20,452	19,092	18,323	55
46	31,142	28,750	27,222	25,856	24,489	22,512	21,455	20,230	19,234	18,005	17,290	56
47	29,902	27,273	25,461	23,915	22,534	21,248	19,906	18,896	17,900	16,807	16,298	57
48	30,636	27,246	25,196	23,341	22,169	20,820	19,833	18,871	17,538	16,424	15,350	58
49	25,899	23,644	22,272	21,218	19,650	18,681	17,904	17,177	16,027	15,379	14,493	59
50	24,267	22,500	21,421	20,262	19,077	18,301	17,556	16,675	15,819	14,546	13,845	60
51	25,562	23,253	21,799	20,550	19,340	18,714	17,728	16,453	15,432	14,032	13,117	61
52	22,946	20,701	19,275	18,175	17,420	16,695	16,186	15,601	14,090	13,188	12,463	62
53	22,780	20,346	18,961	18,142	16,654	15,933	15,363	14,447	13,203	12,536	11,795	63
54	20,269	18,789	17,703	16,738	15,446	14,083	13,987	13,476	12,553	11,680	10,993	64
55	21,502	19,380	18,314	17,577	16,236	15,261	14,104	13,004	11,720	11,069	10,457	65
56	16,908	15,126	14,202	13,073	12,244	11,752	11,635	11,507	10,825	10,656	10,073	66
57	16,641	14,643	13,708	13,395	12,823	12,321	11,772	11,231	10,799	10,089	9,533	67
58	18,283	16,589	15,649	14,672	13,869	13,359	12,787	10,833	10,131	9,614	9,074	68
59	14,041	13,029	12,587	12,254	11,629	11,348	10,727	9,829	9,337	8,985	8,483	69
60	14,645	13,048	12,079	11,111	10,668	10,375	10,047	9,532	8,934	8,529	8,052	70
61	14,284	12,927	12,081	11,273	10,438	10,010	9,525	9,024	8,458	8,080	7,635	71
62	12,937	11,921	11,196	10,600	10,057	9,493	9,091	8,643	8,115	7,746	7,328	72
63	12,215	11,104	10,270	9,692	9,170	8,739	8,361	7,964	7,494	7,142	6,766	73
64	13,258	11,649	10,589	9,890	9,313	8,796	8,288	7,807	7,337	6,865	6,406	74
65	13,530	11,470	10,240	9,479	8,874	8,337	7,804	7,299	6,842	6,333	5,853	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value  $l_{[x]}$  at duration 0 represents the assumed number of lives originally entitled to disability benefits at select age  $[x]$ ; the value  $l_{[x]+t}$  at duration  $t > 0$  represents the number of lives remaining from the original  $l_{[x]}$  who have attained age  $[x]+t$ . Lives are decremented using probabilities from **Table 1B**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

**Table 3A.—Male HIV Disabled Beneficiaries**  
**Expected Future Lifetime**  
(2002-06 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	19.20	19.30	19.02	19.08	19.18	19.48	19.44	19.41	19.31	19.38	19.03	28
19	18.23	18.36	18.02	18.97	19.10	19.35	19.36	19.33	19.27	19.30	18.92	29
20	17.65	17.96	17.98	17.71	17.86	18.45	18.72	19.04	18.93	18.85	18.33	30
21	17.48	17.95	18.08	17.89	18.34	18.45	18.30	17.94	18.48	18.62	17.98	31
22	17.07	17.82	17.41	17.70	18.13	18.38	18.53	18.90	18.75	18.33	17.69	32
23	18.14	18.51	18.23	17.90	18.38	17.93	17.94	17.48	17.24	17.59	17.54	33
24	17.26	17.92	17.58	17.55	17.73	17.46	17.53	17.87	17.32	17.19	17.12	34
25	17.45	17.74	17.58	17.40	17.40	17.22	17.01	16.85	16.71	16.77	16.74	35
26	15.50	16.00	16.19	15.82	16.31	16.33	16.21	16.54	16.55	16.59	16.42	36
27	16.71	17.20	17.53	17.28	17.10	16.91	16.63	16.65	16.74	16.55	16.22	37
28	16.52	16.91	16.74	16.42	16.42	16.50	16.56	16.43	16.49	16.26	15.98	38
29	16.44	17.01	17.04	17.11	16.83	16.54	16.51	16.13	16.07	15.96	15.78	39
30	16.10	16.67	16.59	16.74	16.66	16.46	16.39	16.23	16.00	15.83	15.56	40
31	16.35	16.77	16.64	16.75	16.56	16.40	16.25	15.90	15.67	15.46	15.26	41
32	15.49	16.15	16.09	15.94	15.90	15.78	15.75	15.52	15.38	15.19	14.97	42
33	16.33	16.53	16.47	16.28	16.05	15.78	15.51	15.23	15.11	14.87	14.72	43
34	15.49	15.96	16.06	16.02	15.88	15.63	15.44	15.25	14.94	14.74	14.41	44
35	16.02	16.47	16.30	16.15	15.89	15.55	15.36	15.04	14.63	14.33	14.14	45
36	15.39	15.97	15.98	15.66	15.36	15.06	14.83	14.71	14.44	14.20	13.89	46
37	15.12	15.57	15.50	15.40	15.16	14.86	14.68	14.47	14.24	13.97	13.68	47
38	14.62	15.05	15.01	14.92	14.65	14.53	14.34	14.16	13.94	13.64	13.40	48
39	14.47	14.93	14.99	14.87	14.69	14.38	14.13	13.90	13.64	13.39	13.12	49
40	14.43	14.92	14.87	14.62	14.34	14.09	13.89	13.62	13.48	13.24	12.96	50
41	14.45	14.77	14.63	14.34	14.29	14.12	13.87	13.54	13.24	12.94	12.68	51
42	13.95	14.41	14.40	14.13	13.93	13.62	13.43	13.19	12.96	12.77	12.55	52
43	13.78	14.25	14.13	13.97	13.93	13.83	13.55	13.23	12.98	12.64	12.32	53
44	13.60	14.13	14.05	13.84	13.61	13.26	13.17	12.95	12.75	12.44	12.12	54
45	13.05	13.49	13.48	13.44	13.20	12.98	12.80	12.67	12.26	12.13	11.89	55
46	12.67	13.20	13.17	13.03	12.86	12.59	12.51	12.18	12.02	11.61	11.64	56
47	12.87	13.30	13.23	13.03	12.80	12.61	12.45	12.37	12.04	11.84	11.45	57
48	12.04	12.64	12.57	12.55	12.39	12.20	12.26	11.99	11.66	11.47	11.16	58
49	12.54	12.93	12.85	12.56	12.30	12.30	12.00	11.65	11.38	11.27	10.88	59
50	12.16	12.28	12.30	12.11	12.01	11.78	11.50	11.47	11.12	10.98	10.62	60
51	12.51	12.81	12.81	12.60	12.61	12.12	12.02	11.60	11.32	10.80	10.30	61
52	11.68	11.99	11.89	11.71	11.46	11.21	10.96	10.78	10.49	10.17	10.14	62
53	11.26	11.56	11.62	11.43	11.31	11.03	10.78	10.52	10.37	10.13	9.79	63
54	11.02	11.49	11.40	11.28	11.16	10.96	10.80	10.62	10.28	9.84	9.37	64
55	11.81	11.99	11.81	11.41	11.10	10.68	10.42	10.08	9.72	9.29	9.16	65
56	11.65	11.92	11.69	11.52	11.01	10.67	10.20	9.96	9.53	9.34	9.00	66
57	10.75	11.22	10.99	10.68	10.50	10.31	9.94	9.75	9.29	8.89	8.78	67
58	10.34	10.80	10.53	10.38	10.22	9.86	9.40	9.01	8.67	8.64	8.46	68
59	11.11	11.43	11.40	10.96	10.97	10.23	9.69	9.29	8.97	8.85	8.43	69
60	9.87	10.07	10.16	9.90	9.93	9.53	9.40	9.12	8.61	8.17	8.07	70
61	10.00	10.15	10.18	9.79	9.44	9.09	8.78	8.75	8.36	8.11	7.81	71
62	8.69	9.27	9.44	9.18	9.35	8.82	8.74	8.57	8.11	7.68	7.48	72
63	9.46	9.72	9.71	9.47	9.19	8.93	8.69	8.41	8.05	7.69	7.43	73
64	8.91	9.35	9.29	9.12	8.87	8.63	8.42	8.13	7.76	7.37	7.09	74
65	8.17	8.92	8.94	8.82	8.52	8.31	8.11	7.81	7.43	7.02	6.70	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value  $e_{[x]+t}$  at duration  $t$  represents the average number of years of life remaining for those originally entitled to disability benefits at select age  $[x]$  who have attained age  $[x]+t$ . Values are based on survivorship experience from **Table 2A**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

**Table 3B.—Female HIV Disabled Beneficiaries**  
**Expected Future Lifetime**  
(2002-06 Social Security DI and SSI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	21.93	22.15	22.30	22.01	21.47	21.26	21.26	21.09	20.78	20.57	20.17	28
19	20.40	20.66	20.85	20.86	20.55	20.43	20.43	20.33	20.10	19.94	19.68	29
20	18.53	18.52	18.58	19.80	19.47	19.16	19.39	19.30	19.15	19.06	19.28	30
21	15.95	16.28	16.23	16.31	16.41	16.57	17.07	17.79	18.24	18.85	19.35	31
22	16.87	17.43	18.15	18.72	18.85	18.89	19.16	19.19	19.20	19.44	18.80	32
23	16.97	17.24	17.93	18.52	19.26	19.13	18.68	18.35	18.74	18.20	18.49	33
24	18.11	18.36	19.06	19.65	19.72	19.74	19.99	19.37	18.98	18.72	18.26	34
25	17.53	17.83	18.12	18.60	18.89	19.02	18.67	18.52	18.40	18.06	17.92	35
26	16.71	17.43	17.72	17.67	18.35	18.03	17.86	17.88	17.81	17.79	17.63	36
27	17.66	18.22	18.79	18.83	18.47	18.68	18.37	17.98	17.64	17.54	17.33	37
28	16.65	17.14	17.38	17.52	17.44	17.20	17.42	17.13	17.04	17.09	17.03	38
29	16.83	17.20	17.75	18.15	17.91	17.79	17.67	17.63	17.16	16.99	16.83	39
30	16.27	16.72	17.33	17.34	17.53	17.60	17.54	17.11	17.13	16.69	16.52	40
31	16.14	16.96	17.26	17.27	17.32	17.12	16.97	17.02	16.78	16.57	16.41	41
32	15.63	16.16	16.61	16.63	16.57	16.31	16.24	16.05	16.00	16.14	16.20	42
33	16.19	16.69	17.01	16.98	16.55	16.35	16.25	16.24	16.20	16.19	15.99	43
34	15.36	16.23	16.45	16.70	16.70	16.53	16.42	16.34	16.25	16.15	15.74	44
35	15.61	16.05	16.49	16.38	16.39	16.44	16.13	15.88	16.00	16.05	15.68	45
36	15.61	16.29	16.75	16.90	16.68	16.41	16.41	16.24	15.96	15.68	15.58	46
37	15.07	15.59	15.83	15.76	15.71	15.60	15.38	15.42	15.40	15.32	15.46	47
38	15.15	15.79	15.89	15.98	15.89	15.86	15.85	15.81	15.71	15.46	15.43	48
39	15.48	15.85	16.08	16.22	16.35	16.11	15.94	15.54	15.26	15.06	15.34	49
40	15.26	15.80	16.09	16.10	15.94	15.68	15.42	15.25	15.14	15.10	15.24	50
41	15.65	16.02	16.28	16.08	15.96	15.85	15.77	15.41	15.30	15.27	15.26	51
42	14.68	15.01	15.12	15.14	14.92	14.70	14.64	14.49	14.81	14.78	14.99	52
43	15.35	15.98	16.14	16.26	16.01	15.85	15.60	15.31	15.23	15.01	15.01	53
44	15.94	16.22	16.23	16.22	15.89	15.75	15.72	15.57	15.45	15.16	14.87	54
45	15.61	16.15	16.06	15.78	15.56	15.20	14.96	15.02	15.08	15.12	14.73	55
46	15.54	15.79	15.65	15.45	15.29	15.59	15.33	15.23	14.99	14.98	14.58	56
47	15.13	15.54	15.61	15.58	15.51	15.42	15.42	15.22	15.04	14.98	14.44	57
48	14.16	14.86	15.03	15.19	14.96	14.90	14.62	14.34	14.39	14.33	14.30	58
49	15.32	15.73	15.67	15.42	15.61	15.40	15.04	14.66	14.67	14.27	14.11	59
50	15.48	15.65	15.42	15.27	15.19	14.81	14.42	14.15	13.89	14.06	13.75	60
51	14.22	14.58	14.52	14.38	14.24	13.70	13.44	13.44	13.30	13.57	13.48	61
52	14.52	15.04	15.11	15.00	14.63	14.24	13.67	13.17	13.52	13.41	13.17	62
53	13.82	14.41	14.43	14.06	14.27	13.89	13.39	13.21	13.41	13.09	12.88	63
54	14.34	14.43	14.28	14.08	14.21	14.54	13.64	13.14	13.07	13.00	12.79	64
55	13.14	13.52	13.28	12.81	12.83	12.62	12.61	12.64	12.97	12.70	12.42	65
56	14.44	15.08	15.03	15.28	15.28	14.90	14.04	13.20	13.00	12.19	11.87	66
57	14.04	14.89	14.87	14.20	13.82	13.36	12.96	12.56	12.04	11.85	11.51	67
58	12.67	12.91	12.66	12.47	12.16	11.61	11.10	12.02	11.81	11.42	11.07	68
59	14.43	14.52	14.01	13.38	13.07	12.38	12.07	12.12	11.74	11.18	10.81	69
60	12.91	13.43	13.47	13.60	13.14	12.50	11.89	11.51	11.24	10.75	10.36	70
61	12.49	12.74	12.60	12.47	12.43	11.94	11.52	11.13	10.84	10.33	9.90	71
62	12.76	12.81	12.60	12.28	11.92	11.60	11.09	10.64	10.30	9.76	9.29	73
63	12.32	12.50	12.48	12.19	11.86	11.42	10.91	10.43	10.05	9.52	9.02	73
64	10.92	11.36	11.45	11.22	10.89	10.50	10.11	9.71	9.30	8.90	8.50	74
65	9.96	10.65	10.87	10.71	10.40	10.04	9.69	9.33	8.92	8.59	8.26	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program.
2. The value  $e_{[x]+t}$  at duration  $t$  represents the average number of years of life remaining for those originally entitled to disability benefits at select age  $[x]$  who have attained age  $[x]+t$ . Values are based on survivorship experience from **Table 2B**.
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.

**Table 4.—HIV Disabled Beneficiaries**  
**Aggregate Probability of Death and Expected Future Lifetime,**  
**by Select Age**  
(2002-06 Social Security DI and SSI disability experience)

Select Age	Male		Female	
	Probability of death	Future lifetime	Probability of death	Future lifetime
18	0.044787	17.47	0.038710	20.04
19	0.048542	17.55	0.043227	19.39
20	0.050265	17.14	0.050229	18.63
21	0.049982	17.23	0.060238	17.27
22	0.050369	17.08	0.054542	18.29
23	0.048732	17.04	0.053961	18.01
24	0.051014	16.78	0.046471	18.51
25	0.050598	16.55	0.050892	17.93
26	0.057571	15.94	0.054280	17.42
27	0.051589	16.29	0.049141	17.67
28	0.052309	16.02	0.054861	16.99
29	0.051591	15.98	0.052697	17.07
30	0.051941	15.82	0.054993	16.80
31	0.051068	15.69	0.055798	16.66
32	0.055125	15.30	0.059864	16.10
33	0.051549	15.28	0.056972	16.24
34	0.054346	15.08	0.060775	16.12
35	0.051434	15.06	0.060068	15.98
36	0.054657	14.75	0.059710	16.10
37	0.056222	14.53	0.064153	15.46
38	0.059258	14.19	0.063162	15.63
39	0.059718	14.07	0.061145	15.69
40	0.059903	13.88	0.062466	15.51
41	0.059229	13.78	0.059723	15.66
42	0.062406	13.48	0.065823	14.84
43	0.062882	13.42	0.061525	15.58
44	0.063691	13.21	0.056969	15.73
45	0.067751	12.80	0.058471	15.41
46	0.070203	12.49	0.058654	15.34
47	0.068077	12.54	0.062242	15.23
48	0.075007	12.04	0.068666	14.58
49	0.069322	12.10	0.058685	15.14
50	0.071698	11.70	0.055233	14.86
51	0.067864	12.05	0.063298	13.93
52	0.074646	11.22	0.061358	14.26
53	0.078553	10.97	0.066302	13.72
54	0.081009	10.85	0.060362	13.88
55	0.069465	10.94	0.069407	12.79
56	0.070470	10.84	0.060259	13.90
57	0.080274	10.25	0.060221	13.29
58	0.083696	9.83	0.067922	11.77
59	0.074330	10.32	0.050622	12.72
60	0.088050	9.43	0.063046	12.20
61	0.085059	9.26	0.066842	11.39
62	0.104140	8.71	0.060742	11.18
63	0.091238	8.87	0.064347	10.88
64	0.099767	8.53	0.073752	10.44
65	0.115197	7.87	0.091676	8.99

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits.
2. *Probability of death* at select age [x] represents the average probability of death within one year for those originally entitled to disability benefits at that particular age. Values are exposure-weighted averages of the graduated and blended probabilities of death across all durations from **Table 1A** and **Table 1B**.
3. *Future lifetime* at select age [x] represents the aggregate life expectancy in years for those originally entitled to disability benefits at that particular age. Values are exposure-weighted averages of expected future lifetime across all durations from **Table 3A** and **Table 3B**.

**Table 5.—HIV Disabled Beneficiaries**  
**Aggregate Probability of Death and Expected Future Lifetime,**  
**by Attained Age**  
(2002-06 Social Security DI and SSI disability experience)

Attained Age	Male		Female	
	Probability of death	Future lifetime	Probability of death	Future lifetime
18	0.055509	19.20	0.053494	21.93
19	0.050279	18.68	0.055210	21.29
20	0.055505	18.16	0.047920	20.06
21	0.074231	17.87	0.057698	18.51
22	0.070970	17.77	0.071261	18.00
23	0.055687	18.10	0.065815	17.88
24	0.069124	17.86	0.068908	18.12
25	0.055184	17.96	0.071223	18.21
26	0.066056	17.32	0.075561	18.11
27	0.061913	17.30	0.066603	18.40
28	0.061522	17.21	0.062578	18.30
29	0.059107	17.16	0.064115	18.21
30	0.057050	17.01	0.058267	18.10
31	0.056556	16.90	0.059902	17.91
32	0.061830	16.65	0.055680	17.67
33	0.056706	16.65	0.058220	17.48
34	0.057080	16.45	0.059687	17.23
35	0.055943	16.36	0.056380	17.06
36	0.056040	16.19	0.056072	16.87
37	0.054868	16.00	0.059727	16.62
38	0.053369	15.75	0.057946	16.47
39	0.054632	15.49	0.055685	16.34
40	0.056166	15.26	0.060214	16.16
41	0.053144	15.07	0.059988	16.10
42	0.056297	14.80	0.059569	15.96
43	0.054299	14.57	0.056653	15.88
44	0.057761	14.31	0.057755	15.82
45	0.058147	14.07	0.058081	15.75
46	0.059999	13.81	0.056141	15.68
47	0.060677	13.59	0.056591	15.55
48	0.060028	13.34	0.061708	15.35
49	0.063194	13.11	0.061911	15.32
50	0.061253	12.90	0.063677	15.32
51	0.066611	12.70	0.055530	15.25
52	0.062790	12.51	0.065279	15.07
53	0.070178	12.23	0.059376	15.00
54	0.067593	12.04	0.055129	14.87
55	0.065560	11.87	0.054530	14.57
56	0.070672	11.66	0.059828	14.37
57	0.065720	11.47	0.059760	14.23
58	0.069664	11.18	0.064059	13.99
59	0.064093	10.99	0.053397	13.95
60	0.070407	10.66	0.058217	13.67
61	0.075145	10.42	0.053293	13.41
62	0.071664	10.16	0.057167	13.12
63	0.065350	9.90	0.057535	12.87
64	0.075214	9.55	0.055936	12.58
65	0.081215	9.29	0.051588	12.24
66	0.082824	9.08	0.054195	11.88
67	0.081864	8.86	0.049808	11.53
68	0.089329	8.63	0.059334	11.11
69	0.080223	8.42	0.051733	10.78
70	0.085496	8.12	0.052629	10.34
71	0.084603	7.83	0.044001	9.88
72	0.114112	7.52	0.073018	9.32
73	0.087763	7.42	0.054733	9.01
74	0.085368	7.09	0.085725	8.51
75	0.098152	6.70	0.078385	8.26

Notes:

1. *Attained age* calculated as sum of select age and duration.
2. *Probability of death* at attained age *x* represents the average probability of death within one year for those originally entitled to disability benefits who have attained that particular age. Values are exposure-weighted averages of the graduated and blended probabilities of death across all durations from **Table 1A** and **Table 1B**.
3. *Future lifetime* at attained age *x* represents the aggregate life expectancy in years for those originally entitled to disability benefits who have attained that particular age. Values are exposure-weighted averages of expected future lifetime across all durations from **Table 3A** and **Table 3B**.

**Table 6.—HIV Disabled Beneficiaries**  
**Aggregate Probability of Death and Expected Future Lifetime,**  
**by Duration**

(2002-06 Social Security DI and SSI disability experience)

Duration	Male		Female	
	Probability of death	Future lifetime	Probability of death	Future lifetime
0	0.097838	13.86	0.089947	15.45
1	0.064782	14.39	0.070570	15.97
2	0.057035	14.43	0.059921	16.19
3	0.057247	14.37	0.054834	16.24
4	0.053008	14.31	0.051065	16.22
5	0.057010	14.21	0.050754	16.14
6	0.054545	14.15	0.050643	16.06
7	0.054015	14.06	0.055895	15.98
8	0.054725	13.96	0.053956	16.00
9	0.053843	13.87	0.054242	16.00
10	0.054744	13.77	0.050712	15.98
11	0.055181	13.68	0.051369	15.87
12	0.055607	13.57	0.051888	15.75
13	0.056211	13.44	0.052458	15.60
14	0.056839	13.31	0.053166	15.39
15	0.057567	13.17	0.053910	15.15
16	0.058360	13.07	0.054765	14.87
17	0.058762	12.98	0.055558	14.60
18	0.060161	12.82	0.055861	14.36
19	0.061076	12.67	0.056697	14.19
20	0.061222	12.64	0.056926	14.13
21	0.061958	12.51	0.057244	14.09
22	0.061996	12.40	0.058007	14.12
23	0.062431	12.35	0.058355	14.14
24	0.062311	12.38	0.058618	14.07
25	0.062330	12.35	0.058423	14.20
26	0.062954	12.20	0.059096	14.20
27	0.063908	12.08	0.059018	14.17
28	0.065005	11.92	0.057405	14.33
29	0.066311	11.65	0.058646	14.14
30	0.067479	11.43	0.057083	14.08

Notes:

1. *Duration* measured in years since selection.
2. *Probability of death* at duration  $t$  represents the average probability of death during the  $(t+1)$  year of entitlement to disability benefits. Values are exposure-weighted averages of the graduated and blended probabilities of death across all ages from **Table 1A** and **Table 1B**.
3. *Future lifetime* at duration  $t$  represents the aggregate life expectancy in years for those originally entitled to disability benefits who have not died after  $t$  years. Values are exposure-weighted averages of expected future lifetime across all ages from **Table 3A** and **Table 3B**.

**Table 7A.—Male HIV Disabled Beneficiaries (DI Program Only)**  
**Probability of Death**  
(2002-06 Social Security DI disability experience)

Select age	Duration of disability											Attained age
	0	1	2	3	4	5	6	7	8	9	10 or more	
18	0.024657	0.041145	0.058032	0.059253	0.054949	0.053572	0.061811	0.057440	0.066887	0.035338	0.037681	28
19	0.032243	0.043722	0.058083	0.061422	0.055284	0.055099	0.057101	0.054325	0.062518	0.035464	0.038696	29
20	0.038270	0.055300	0.035991	0.063847	0.055981	0.056344	0.053327	0.051605	0.058160	0.036238	0.055417	30
21	0.038705	0.058589	0.033994	0.056928	0.051626	0.043134	0.033003	0.051055	0.077089	0.038684	0.052362	31
22	0.065509	0.040886	0.092898	0.068567	0.056167	0.077781	0.056633	0.048972	0.020523	0.043449	0.034829	32
23	0.072210	0.042126	0.031205	0.088889	0.040103	0.053836	0.026180	0.054196	0.073900	0.059673	0.022260	33
24	0.072640	0.045347	0.058468	0.045839	0.053972	0.055124	0.070062	0.019851	0.036865	0.059699	0.039388	34
25	0.077586	0.061180	0.034563	0.056566	0.057429	0.044561	0.052643	0.038521	0.057365	0.062272	0.040487	35
26	0.099795	0.059255	0.035806	0.083253	0.061048	0.042123	0.073559	0.061409	0.057245	0.053827	0.053601	36
27	0.082548	0.080992	0.044603	0.040785	0.038760	0.034950	0.045060	0.056402	0.046730	0.046450	0.044610	37
28	0.076355	0.047245	0.033742	0.038502	0.053000	0.048453	0.054106	0.052779	0.039310	0.039571	0.046338	38
29	0.092223	0.053080	0.052731	0.042170	0.041037	0.047182	0.036208	0.051644	0.058636	0.049359	0.049844	39
30	0.098648	0.048434	0.061538	0.049107	0.040668	0.054033	0.045406	0.045043	0.043273	0.040969	0.042132	40
31	0.068620	0.044439	0.067468	0.046837	0.046460	0.052752	0.037858	0.043811	0.050080	0.049150	0.045608	41
32	0.084768	0.060570	0.054738	0.055999	0.043594	0.054699	0.045887	0.049365	0.050885	0.050140	0.046381	42
33	0.061526	0.052243	0.048414	0.041308	0.048227	0.042510	0.043080	0.052737	0.045349	0.048486	0.042118	43
34	0.075890	0.066200	0.046715	0.058421	0.046334	0.046931	0.049608	0.043152	0.049840	0.042681	0.047315	44
35	0.080008	0.050723	0.041230	0.038478	0.037613	0.047412	0.041341	0.037869	0.042701	0.054481	0.046384	45
36	0.088430	0.054530	0.034370	0.039743	0.042522	0.041840	0.052440	0.046073	0.047636	0.048321	0.051520	46
37	0.082840	0.058100	0.055276	0.045901	0.043537	0.047106	0.050920	0.051225	0.044525	0.051006	0.046569	47
38	0.092289	0.057632	0.056616	0.048392	0.051752	0.051331	0.052469	0.052575	0.046730	0.053322	0.052747	48
39	0.084673	0.068160	0.050723	0.051472	0.042475	0.048950	0.049359	0.049664	0.054407	0.044416	0.057956	49
40	0.088599	0.060461	0.046183	0.042067	0.042703	0.051082	0.043275	0.055475	0.052086	0.047686	0.048692	50
41	0.086182	0.050102	0.045555	0.062765	0.054049	0.047987	0.043742	0.045023	0.043753	0.058132	0.063245	51
42	0.091952	0.063411	0.043754	0.047755	0.045660	0.049378	0.054820	0.049260	0.052163	0.054640	0.054293	52
43	0.091364	0.057538	0.050290	0.060069	0.062574	0.043154	0.045548	0.053435	0.044740	0.047081	0.053025	53
44	0.098725	0.062875	0.046775	0.047371	0.044423	0.062199	0.051449	0.061049	0.044624	0.045009	0.053401	54
45	0.097348	0.071667	0.065957	0.050205	0.056552	0.053831	0.067322	0.043981	0.060279	0.055056	0.055379	55
46	0.108690	0.072800	0.058800	0.050628	0.052486	0.064284	0.044124	0.049547	0.039629	0.078379	0.062089	56
47	0.099729	0.062534	0.058764	0.045315	0.051205	0.055458	0.066887	0.051041	0.051297	0.046991	0.056825	57
48	0.127223	0.069899	0.071193	0.048889	0.057625	0.080214	0.057312	0.048612	0.060864	0.068659	0.058626	58
49	0.097247	0.072067	0.045190	0.056285	0.069296	0.048752	0.053421	0.052907	0.067804	0.045482	0.059932	59
50	0.079115	0.081935	0.068246	0.067423	0.052531	0.050863	0.078472	0.053571	0.059641	0.048957	0.059442	60
51	0.094271	0.073529	0.058371	0.072749	0.033951	0.065789	0.048076	0.049735	0.033439	0.040690	0.071108	61
52	0.104867	0.069037	0.052367	0.062272	0.054252	0.055545	0.068642	0.064873	0.054619	0.085293	0.051671	62
53	0.100494	0.085706	0.069957	0.071269	0.065493	0.059743	0.064950	0.068290	0.063916	0.053971	0.045858	63
54	0.129392	0.076611	0.072248	0.073266	0.070247	0.076766	0.049807	0.052423	0.049390	0.043966	0.066774	64
55	0.095984	0.065668	0.047818	0.061789	0.056200	0.059748	0.059749	0.055978	0.051657	0.081688	0.076387	65
56	0.096747	0.062898	0.067662	0.044079	0.058427	0.045078	0.068229	0.055238	0.067525	0.061425	0.067363	66
57	0.124385	0.081330	0.069392	0.087385	0.063952	0.058329	0.092464	0.066698	0.062775	0.095890	0.072216	67
58	0.113187	0.065347	0.082609	0.080529	0.049291	0.052826	0.064344	0.060824	0.092443	0.095785	0.105266	68
59	0.109048	0.078994	0.051082	0.095061	0.019735	0.048054	0.057577	0.042527	0.102733	0.071595	0.080414	69
60	0.110894	0.104691	0.073280	0.114447	0.060945	0.075197	0.073242	0.052935	0.071017	0.089366	0.074083	70
61	0.106534	0.083656	0.048614	0.071359	0.070254	0.076935	0.100209	0.056727	0.078396	0.092409	0.076677	71
62	0.152393	0.138472	0.056211	0.125078	0.053858	0.082350	0.084602	0.062992	0.035695	0.102965	0.120237	72
63	0.136822	0.099334	0.068314	0.085679	0.075237	0.075701	0.079935	0.069869	0.075075	0.089310	0.086421	73
64	0.115702	0.101266	0.073314	0.075031	0.079087	0.079941	0.083837	0.074060	0.076276	0.090175	0.085499	74
65	0.143108	0.103214	0.077680	0.069823	0.082506	0.084429	0.087404	0.078406	0.077829	0.090566	0.086318	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program. Probabilities reflect experience of the DI rolls only. Beneficiaries may be concurrently entitled to DI and SSI benefits, but those entitled to SSI only are not considered.
2. The value  $q_{[x]+t}$  at duration  $t$  represents the probability of death—in a multiple-decrement environment—during the  $(t+1)$  year of entitlement for those originally entitled to disability benefits at select age  $[x]$  who have attained age  $[x]+t$ .
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Where the data are very sparse, particularly for some very young and very old select ages, results are estimated using blending techniques and Whittaker-Henderson Type B two-dimensional graduation to mitigate the problem. See **Appendix A, Section E.** for details.

**Table 7B.—Female HIV Disabled Beneficiaries (DI Program Only)**  
**Probability of Death**  
(2002-06 Social Security DI disability experience)

Select age	Duration of disability										10 or more	Attained age
	0	1	2	3	4	5	6	7	8	9		
18	0.090240	0.081456	0.059973	0.036480	0.025330	0.035403	0.041642	0.055120	0.056852	0.049920	0.046746	28
19	0.093342	0.081892	0.066233	0.040882	0.029866	0.037710	0.041255	0.053696	0.054152	0.049052	0.042328	29
20	0.101061	0.082016	0.071662	0.045864	0.034483	0.040361	0.040916	0.051660	0.052036	0.048195	0.037635	30
21	0.094769	0.069577	0.054795	0.061741	0.043678	0.075150	0.063654	0.049332	0.050574	0.046998	0.032889	31
22	0.130058	0.079039	0.117233	0.028868	0.062170	0.069577	0.049587	0.052201	0.089969	0.045894	0.030159	32
23	0.094331	0.058462	0.077280	0.087659	0.022479	0.037636	0.037379	0.037665	0.034247	0.045753	0.029664	33
24	0.094317	0.098095	0.083760	0.057526	0.047705	0.057887	0.009422	0.018287	0.039483	0.041898	0.033061	34
25	0.094733	0.060898	0.062274	0.060910	0.044346	0.032481	0.025289	0.033411	0.027164	0.038019	0.036724	35
26	0.105480	0.054470	0.069239	0.068705	0.038685	0.031447	0.047155	0.063944	0.062097	0.030474	0.039328	36
27	0.058065	0.077973	0.046025	0.037381	0.060635	0.027337	0.039701	0.040328	0.019758	0.060924	0.032219	37
28	0.085089	0.069266	0.055694	0.027362	0.038436	0.051951	0.031397	0.047529	0.067000	0.061078	0.033896	38
29	0.106521	0.070102	0.083889	0.040335	0.029021	0.051929	0.055835	0.015720	0.045855	0.032991	0.028701	39
30	0.096123	0.103072	0.038931	0.048651	0.052354	0.030898	0.025181	0.038439	0.032755	0.027902	0.037169	40
31	0.102277	0.043724	0.047196	0.046068	0.040256	0.040096	0.054707	0.039915	0.026099	0.017503	0.031535	41
32	0.126024	0.081894	0.076646	0.037627	0.022678	0.050255	0.041668	0.050708	0.062811	0.067777	0.029807	42
33	0.120422	0.066934	0.045180	0.037495	0.039277	0.043912	0.052432	0.042084	0.044032	0.062352	0.038425	43
34	0.119112	0.069889	0.066071	0.044018	0.031158	0.048642	0.040250	0.046337	0.041864	0.050019	0.044555	44
35	0.090138	0.096538	0.050469	0.044673	0.035506	0.029351	0.038470	0.074237	0.045779	0.017236	0.038057	45
36	0.098488	0.066175	0.051617	0.035406	0.036052	0.043549	0.040620	0.029569	0.028277	0.022959	0.051428	46
37	0.085355	0.065273	0.051930	0.046324	0.064401	0.053142	0.055979	0.063077	0.035750	0.045861	0.047770	47
38	0.092496	0.049823	0.050963	0.052229	0.039818	0.073640	0.060243	0.035687	0.047430	0.051084	0.038377	48
39	0.093844	0.059661	0.050438	0.042764	0.040479	0.036290	0.038023	0.057364	0.040831	0.062645	0.041766	49
40	0.106095	0.066295	0.052526	0.038953	0.034275	0.046867	0.056340	0.047855	0.036073	0.069208	0.050371	50
41	0.072027	0.068620	0.032538	0.031849	0.052932	0.050994	0.037715	0.044272	0.050994	0.063694	0.047511	51
42	0.059043	0.051025	0.044162	0.048788	0.026087	0.039117	0.065199	0.070481	0.056673	0.042801	0.051886	52
43	0.113447	0.050328	0.062580	0.027985	0.044480	0.038200	0.036329	0.047444	0.053985	0.075848	0.037617	53
44	0.066770	0.055801	0.056694	0.029235	0.039789	0.048082	0.066803	0.057584	0.047537	0.048490	0.044387	54
45	0.088083	0.039806	0.036914	0.040278	0.031580	0.050968	0.061714	0.056417	0.044654	0.007840	0.042643	55
46	0.054238	0.046241	0.037741	0.040515	0.061669	0.036888	0.010317	0.043516	0.078206	0.033495	0.040946	56
47	0.092272	0.074143	0.052833	0.043552	0.057918	0.059318	0.029358	0.046518	0.057246	0.019560	0.064188	57
48	0.101147	0.063682	0.068537	0.036247	0.051285	0.065004	0.027730	0.048000	0.059032	0.048894	0.033855	58
49	0.111352	0.058508	0.042797	0.048763	0.036377	0.024072	0.041240	0.041705	0.053225	0.040595	0.031702	59
50	0.072860	0.051496	0.055549	0.061903	0.044934	0.020083	0.045348	0.079135	0.101914	0.028205	0.037663	60
51	0.070706	0.067233	0.033399	0.043025	0.032373	0.044320	0.082949	0.076503	0.066313	0.052622	0.040915	61
52	0.094184	0.072638	0.062218	0.031598	0.046886	0.009498	0.023234	0.109230	0.033201	0.053619	0.045075	62
53	0.115299	0.055963	0.039727	0.074778	0.055259	0.032888	0.057557	0.064683	0.051064	0.019425	0.051443	63
54	0.071141	0.034967	0.042711	0.062368	0.068060	0.035308	0.036324	0.067861	0.079381	0.025138	0.037461	64
55	0.076947	0.069409	0.046751	0.063360	0.047081	0.080171	0.042361	0.091982	0.058928	0.043715	0.032987	65
56	0.110811	0.042080	0.102323	0.059866	0.039862	0.015957	0.017699	0.055320	0.047312	0.042638	0.058495	66
57	0.132890	0.065833	0.012757	0.068250	0.033428	0.035336	0.019577	0.021589	0.027980	0.041454	0.036093	67
58	0.090744	0.043768	0.053177	0.064195	0.035874	0.040866	0.193283	0.091130	0.036684	0.040495	0.058118	68
59	0.048555	0.027628	0.027222	0.045140	0.018305	0.085070	0.118793	0.030525	0.068540	0.039778	0.046311	69
60	0.133317	0.061087	0.081064	0.018179	0.037209	0.022957	0.075453	0.053438	0.039233	0.040515	0.069049	70
61	0.113232	0.077519	0.091996	0.075491	0.055664	0.032541	0.051082	0.050846	0.038727	0.043018	0.030647	71
62	0.101823	0.076197	0.067590	0.059989	0.040000	0.040398	0.042936	0.046468	0.038938	0.046867	0.074027	72
63	0.105815	0.086589	0.076067	0.066778	0.064144	0.037716	0.035184	0.040921	0.039199	0.050844	0.035224	73
64	0.110244	0.098075	0.085496	0.073418	0.051862	0.034863	0.027900	0.034605	0.039528	0.055157	0.109890	74
65	0.114763	0.109392	0.095098	0.079834	0.054387	0.032018	0.020830	0.028113	0.039856	0.059627	0.098425	75

Notes:

1. *Select age* denotes age last birthday at entitlement to disability benefits. *Duration* measured in years since selection. *Attained age* calculated as sum of select age and duration. Results do not include auxiliary beneficiaries payable under the DI program. Probabilities reflect experience of the DI rolls only. Beneficiaries may be concurrently entitled to DI and SSI benefits, but those entitled to SSI only are not considered.
2. The value  $q_{[x]+t}$  at duration  $t$  represents the probability of death—in a multiple-decrement environment—during the  $(t+1)$  year of entitlement for those originally entitled to disability benefits at select age  $[x]$  who have attained age  $[x]+t$ .
3. Select-and-ultimate table is read across the row for 0-10 years since selection, and down the last (ultimate) column for 10 or more years since selection.
4. Where the data are very sparse, particularly for some very young and very old select ages, results are estimated using blending techniques and Whittaker-Henderson Type B two-dimensional graduation to mitigate the problem. See **Appendix A, Section E** for details.



# Appendix A

## Study Population and Methods

### A. Overview

This study is based on 154,000 records of Social Security Disability Insurance (DI) worker beneficiaries drawn from the administration’s Master Beneficiary Record (MBR) as of February 2009, and an additional 98,000 records drawn from the Supplemental Security Record (SSR) as of November 2011. The 5-year observation period covers January 1, 2002 through December 31, 2006. These records provide 647,000 life-years of exposure for males and 234,000 life-years of exposure for females. The primary variables of interest are: the age at entitlement, the number of years since entitlement, and sex of the beneficiary.

Death is the main cause of termination among beneficiaries with HIV impairments. Benefits may also end because of non-death reasons such as returning to work, conversion to old-age benefits under the DI program, or 12 consecutive months of non-pay status under the SSI program. However, due to the sparsity of such terminations among HIV beneficiaries, these categories are not explicitly examined. The table below provides a breakdown of the termination data collected from the current observation period. For comparison, we also include results from the two prior periods that were analyzed in Actuarial Note #146.

**Number of HIV Disabled Beneficiaries on the DI and SSI Rolls with Benefits Terminated, by Reason**

	Male	Female	Total
(January 2002-December 2006)			
Death	38,968	13,774	52,742
Non-Death	12,344	4,058	16,402
Total	51,312	17,832	69,144
(January 1997-December 2001)			
Death	44,747	13,643	58,390
Non-Death	11,440	3,657	15,097
Total	56,187	17,300	73,487
(January 1992-December 1996)			
Death	124,553	21,136	145,689
Non-Death	7,259	2,450	9,709
Total	131,812	23,586	155,398

Source: HIV database as of June 2011. Results do not include auxiliary beneficiaries payable under the DI program.

### B. Data Considerations

Beneficiaries observed for this study appeared on the DI or SSI rolls sometime during the period 2002-06 because of an HIV-related impairment. An HIV diagnosis code (042, 043, 044) may be listed as either the primary or secondary reason for disability. We also consider beneficiaries who have had an

HIV impairment in the past, but appeared on the rolls during the observation period under another impairment category. However, instances where HIV is present but the applicant is either (1) denied benefits, or (2) initially allowed benefits without HIV being listed as the primary or secondary reason for disability are not captured in the study. A small number of HIV-disabled child and widow DI beneficiaries are also excluded from this study.

Mortality experience is affected by several unique circumstances. Since experience begins with entitlement, deaths that occur during the 5-month waiting period prior to entitlement to DI benefits are outside the scope of this study. It is also true that a claimant may die in the first month of entitlement, or before final disposition of the disability claim—in which case only retroactive disability benefits may be payable. No exposure is credited in these instances, although death is counted. Note that the SSI program does not have a waiting period and SSI-only recipients come under observation as soon as eligibility is determined.

In general, we observe study participants through the end of the duration in which benefits are terminated or, if earlier, through the end of the observation period. As previously mentioned, *non-death* termination can occur when a beneficiary returns to work, or remains in non-pay status for 12 consecutive months under the SSI program—for example, due to excess income or resources. Under the DI program, disabled workers have the option to convert to old-age benefits anytime after age 62. Mandatory conversion takes place at normal retirement age. DI benefits are terminated upon conversion as the OASI Trust Fund begins to pay old-age benefits. However, in this study we continue to observe beneficiaries beyond the time of conversion. So, to a certain extent, this study traverses the activity of the OASI rolls by tracking deaths of former disabled workers who convert to old-age benefits. The SSI program has an *aged* category for non-disabled individuals whose eligibility requires them, in part, to be age 65 or older. However, there is no automatic conversion to this category. Impaired beneficiaries continue to be considered disabled beyond this age, and also continue under observation in this study.

Other exceptional cases exist where observation continues beyond non-death termination of benefits. This occurs for some SSI-only cases in which the SSR is automatically annotated upon reporting of death. Instances where death is recorded after non-death termination may result in additional exposure credited to an otherwise terminated recipient. However, this anomaly does not materially impact results.

This study integrates a special longitudinal file constructed from the SSR. However, due to the nature of the data, several problems were encountered in combining MBR records with SSR records relating to individuals who receive both DI and SSI benefits during a period of disability. Dates of DI entitlement and termination from the MBR are used to calculate exposure for concurrent cases. Although these dates capture exposure for overlapping periods of DI and SSI eligibility, they do not capture exposure for periods outside DI entitlement. So cases where SSI-only benefits are paid during any part of the 5-month waiting period will not have exposure for those months counted. Also some exposure may not be captured for beneficiaries who transition from concurrent status to SSI-only eligibility, due to SGA earnings after the 36-month DI extended period of eligibility. In such cases, observation ends upon termination of DI benefits as a result of work activity. However, SSI eligibility may continue if earnings are such that *countable income* does not exceed the applicable Federal SSI benefit rate. It should be noted, however, that the above omissions do not materially impact results. Refer to **Appendix B** for details on SSI considerations.

Another problem involves beneficiaries having multiple records on the SSR. It is possible that different records are related to different impairments. For example, an SSI beneficiary might have several records of eligibility; at least one of which, but not necessarily all, are related to HIV impairments. Given the structure of the longitudinal file, it may not be possible to distinguish which records in multiple-record cases are relevant to the study and which are not. In some instances, non-HIV related periods of disability may be included in the study.

### C. Methods

The availability of complete data on each person in the study (sex, date of birth, date of entitlement, date of decrement, and cause of decrement) allows for direct estimation of the *multiple-decrement probabilities*  $q^{(i)}$ , where  $i$  represents the cause of decrement. Each unit age interval  $(x, x + 1]$  represents one life-year of potential exposure. For each interval that an individual is under observation, the person enters the interval at age  $x + r$  ( $0 \leq r < 1$ ), and is scheduled to exit the interval at age  $x + s$  ( $0 < s \leq 1$ ). Note that  $r = 0$  except for instances where the beginning of the observation period falls within the age interval. Similarly  $s = 1$  except for instances where the end of the observation period falls within the interval. Clearly,  $s - r$  is the amount of time that the person is scheduled to be exposed to the risks of decrement. The total *scheduled exposure* for an interval is obtained by summing over all persons.<sup>11</sup>

As an example of the above method, consider a disabled worker entering an interval at age  $x + r$ . The *scheduled ending age*,  $x + s$ , is established for the interval under the expect-

<sup>11</sup> For a complete discussion, refer to chapter 6 of *Survival Models and Their Estimation* (London 1988, second edition).

ation that the person will either survive to the end ( $s = 1$ ), or exit the study due to the end of the observation period ( $s < 1$ ). Scheduled exposure is then credited as follows: if the person survives to the end of the interval, then exposure is credited from  $x + r$  to  $x + 1$ ; if the person dies or recovers during the interval, exposure is still credited from  $x + r$  to  $x + 1$ ;<sup>12</sup> if the observation period ends during the interval, then exposure is credited from  $x + r$  to  $x + s$ . A modification is made to the way exposure is calculated for determining recovery probabilities. Since recovery is no longer a consideration after converting to old-age benefits, exposure is credited only up until the month of the switch.

Multiple-decrement probabilities are calculated by dividing the observed number of deaths or recoveries in an interval by the aggregate scheduled exposure for that interval. As previously noted, recovery rates are not analyzed in this study.

### D. Select Age and Exposure

This is a select-and-ultimate study with a 10-year select period implying that the risks of decrement for beneficiaries 10 or more years beyond selection are no longer a function of select age, but a function of attained age only.

Rarely does entitlement to disability benefits occur on a beneficiary's birthday. To facilitate exposure calculations, *insuring age* and the corresponding *insuring date of birth* may be substituted for the actual age at entitlement and the actual date of birth, respectively. This study uses an insuring age that is set at the beneficiary's *age last birthday* as of entitlement. As an example:

**Date of entitlement:** February 1, 2005

**Date of birth:** July 10, 1960

**Actual age at entitlement:** 44 years, 206 days

**Insuring age (also select age):** 44 years

**Insuring date of birth:** February 1, 1961

Use of insuring age results in an integral *select age* at entitlement, ensuring that subsequent durations begin on the beneficiaries birthday. This is true whether the participant enters the study during the observation period, or is already part of the entitlement group when the observation period opens.

### E. Duration and Graduation

The unit intervals for which a beneficiary is under observation are called *durations*. For each select age  $[x]$  and duration  $n$ , the quantity  $s - r$  represents the amount of exposure contributed to the observation interval  $([x] + n, [x] + n + 1]$ . For durations beyond the 10-year select period, exposure is credited to the appropriate attained age interval  $(x + n, x + n + 1]$ .

<sup>12</sup> All persons are *expected* to survive to the end of the interval, even those who wind up dying or recovering at age  $x + t \leq x + s$ . The important point is that decrement was not expected so the scheduled ending age is set at  $x + 1$ .

Most of the probabilities developed for this study are reported as “raw” (ungraduated) values. However in cells with very little exposure, particularly those for young ages, the results are not a reliable measure of mortality. We sought to mitigate the problem caused by lack of data by using blending and graduation techniques.<sup>13</sup>

Although HIV disability beneficiaries may live to older ages, current administrative records show very little evidence of survival beyond age 75. Therefore, no results are presented beyond this attained age.

### F. Survival Tables

Survival tables 2A and 2B are constructed from select-and-ultimate death probabilities. The values  $l_{[x]}, l_{[x]+1}, \dots, l_{75}$  are first calculated for select age  $[x] = 18$ , using a radix of 100,000. This step determines values for the ultimate period of the table. Values for select ages  $[x] > 18$  are then derived from the ultimate values by working backwards. For example,  $l_{[x]}$  is determined from  $l_{x+10}$  using the survival probabilities of the select period for the given select age. The value for  $l_{[x]+t}$  is the number of lives remaining from the original  $l_{[x]}$  who have attained age  $[x] + t$ . The number alive at any given select or attained age is not an actual count of disability beneficiaries, but is the product of combining probabilities with an arbitrary radix.

The survival tables are read across the row, or *select period*, for 0-10 years since selection, then down the last column, or *ultimate period* for 10 or more years since selection. The example below uses numbers from **Table 2A** for male beneficiaries disabled at select age 30.

Years since entitlement	Number living	Probability of survival	Attained age
0	64,898	1.000	30
1	58,951	.908	31
5	46,937	.723	35
10	36,403	.561	40
15	28,594	.441	45

### G. Expected Future Lifetime

Expected future lifetime tables are derived from the survival functions described above using basic actuarial principles found in any standard actuarial text on life contingencies. We also present the results of aggregating over duration, by select age (see **Table 4**) or attained age (see **Table 5**).

<sup>13</sup> Estimation techniques were used with “cells” having roughly 50 or fewer life-years of exposure. The horizontal and vertical smoothing coefficients of two-dimensional Whittaker-Henderson Type B graduation were chosen to obtain some degree of smoothness within both individual durations (columns) and select ages (rows). For details, refer to *Graduation: The Revision of Estimates* (London 1985).

Expected future lifetime for a specific *select* age is an exposure-weighted average of the expected future lifetime at each duration of that age. This differs from the expected future lifetime for a specific *attained* age, which is an exposure-weighted average of the expected future lifetime of various select ages at various durations.

For example, expected future lifetime for *select* age 40 is a weighted average of the expected lifetimes shown across the select row and down the ultimate column. In this instance, each cell represents a different attained age. In contrast, expected future lifetime for *attained* age 40 is the average of the expected lifetimes for a select 40-year-old at duration 0, a select 39-year-old at duration 1,... a select 18-year-old at duration 22—all of whom are attained age 40.

### H. Probabilities and Absolute Rates

The data for this study were collected in a multiple-decrement environment, however, we explicitly consider only two major decrement classes—death and non-death. The symbol  $q^{(d)}$  represents the probability of death in the presence of other decrements and is defined as follows:

$$q_x^{(d)} = \int_0^1 {}_t p_x^{(\tau)} \mu_{x+t}^{(d)} dt$$

where  $p^{(\tau)}$  is the probability of surviving under all decrements; and  $\mu^{(d)}$  is the force of mortality.

For each cause of decrement in a multiple-decrement model, it is possible to associate a single-decrement rate that depends only on a particular cause of decrement. The symbol  $q'^{(d)}$  represents the *single-decrement (absolute) rate* of death and is defined as follows:

$$q_x'^{(d)} = \int_0^1 {}_t p_x'^{(d)} \mu_{x+t}^{(d)} dt$$

where  $p'^{(d)}$  is the probability of *not dying*. In this representation, beneficiaries who decrement for causes other than death are “taken out” of the total number exposed. Observation stops at the point of non-death decrement resulting in total exposure which is somewhat less than that used in formulating death probabilities. Absolute rates are not presented in this study.<sup>14</sup>

<sup>14</sup> For a complete discussion on multiple-decrement probabilities and associated single-decrement rates, the reader is referred to chapter 10 of *Actuarial Mathematics* (Bowers et al. 1997).

# Appendix B

## Disability Program Overview

### A. Definition of Disability

For purposes of entitlement to DI benefits, *disability* is defined as the inability to engage in any substantial gainful activity (SGA) by reason of any medically determinable physical or mental impairment. The impairment must be expected to result in death or to last for a continuous period of at least 12 months, and must prevent the claimant from performing previous work, or any other kind of work in which a significant number of jobs exist.

The formal determination of disability is based on a five-step sequential evaluation process defined in regulations. The first step compares actual earnings to a specified level to determine ability to engage in SGA. Absent such earnings, the sequential process continues with an evaluation of the nature and severity of the alleged impairment, followed by consideration of age, education, and work experience.

The same definition of disability applies when determining eligibility of adults under the SSI program as described under title XVI of the Social Security Act. This means-tested cash benefits program is also administered by the Social Security Administration.

Special provisions exist for the evaluation of insured status and disability in cases of statutory blindness.

### B. Disability Insured Status and Waiting Period

To be insured for DI benefits, a worker must earn a requisite number of quarters of coverage, or *credits* in employment covered by Social Security.<sup>15</sup> To be considered for disability benefits, a worker must be *disability insured*. This requires having obtained a specific number of credits in recent quarters, as well as enough total credits to be *fully insured*—at least 6 and no more than 40 credits are required for fully insured status.<sup>16</sup> The number of required recent credits varies by age, and ranges from 6 out of the last 12 quarters immediately preceding the onset of disability, to 20 out of the last 40. There is no insured status requirement for disability benefits under the SSI program.

There is a required waiting period for DI benefits, which consists of 5 consecutive full calendar months beginning with the earliest calendar month throughout which the worker satisfied both the disability insured requirements and definition of dis-

ability. Benefits are not payable during this period. By law, the waiting period is waived for individuals who had a prior period of disability which ended within 5 years of the current period of disability. There is no waiting period for disability benefits under the SSI program.

### C. Substantial Gainful Activity (SGA)

*Substantial work activity* involves doing significant physical or mental activities; *gainful work activity* is done for pay or profit. The degree to which an impairment limits an individual's ability to perform basic work activities is essential in determining the severity of the disability.

Certain earnings criteria have been established as reasonable indications of whether an individual is engaging in SGA. The dollar amount associated with defining SGA was originally set at \$100 at the inception of the DI program. This amount was updated on an ad hoc basis until 2001, at which time the amount became subject to the annual increase in average wages. As of 2012, an employee earning over \$1,010 per month will ordinarily demonstrate SGA; less than that amount will ordinarily demonstrate lack of SGA.

### D. Impairments

To establish a disability, claimants must provide sufficient evidence of any medical condition in the form of symptoms, clinical signs, and laboratory findings. To determine the severity of the disability, SSA consults the *Listing of Impairments*, which sets forth the criteria needed to be met by various impairments in order for the claimant to be judged incapable of performing SGA. The listings are a set of medical evaluation criteria in the Federal regulations that describe physical and mental conditions which are so severe that it is presumed that individuals whose medical conditions meet or equal these criteria are disabled regardless of their age, education, or work experience.

Many individuals are found to be disabled even though impairments fail to meet the level of severity detailed in the listings. In these cases, an individual's medical condition is evaluated in conjunction with age, education, and job skills. These *vocational factors* are given increasing weight with the advancing age of the worker, and are particularly significant in determining disability among workers age 50 or older.

### E. Determination and Appeals Process

Regulations describe the process of administrative review performed by the Disability Determination Services (DDS) and the Office of Disability Adjudication and Review (ODAR). The DDS is responsible for developing medical evidence and rendering the initial determination of whether the

<sup>15</sup> In 2012, a worker receives one credit (up to a maximum of four) for each \$1,130 of annual covered earnings. This amount is indexed each year by the increase in average wages.

<sup>16</sup> A fully insured worker has at least one credit (whenever acquired) for each year starting with the year the worker attains age 22 and ending with the year before the year the worker attains age 62, becomes disabled, or dies (whichever occurs earliest)—credits are not required for years that are partially or fully within a period of disability.

claimant is disabled or blind under the law. If dissatisfied with the initial DDS decision, the claimant has the right to request further administrative review by the DDS, ODAR, and beyond to the federal courts.

Many factors exist that affect the number of disability claims filed as well as the rate at which these claims are allowed or denied. However, the impact of any one factor is difficult to gauge. In general, economic, demographic, and administrative factors all have a direct effect on the size and scope of the DI program.<sup>17</sup>

### ***F. SSI Considerations***

The SSI program provides assistance to individuals who are either ineligible for Social Security benefits, or whose benefits may not provide a basic level of income. This “last resort” type of assistance is available to aged, blind, or disabled individuals whose income and resources are below specified lev-

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<sup>17</sup> Some of the determinants which may have a significant impact on both the number of claims filed and the rate of favorable determinations are discussed in detail in Actuarial Study #122: *Social Security Disability Insurance Program Worker Experience* (Zayatz, May 2011) [www.ssa.gov/OACT/NOTES/actstud.html](http://www.ssa.gov/OACT/NOTES/actstud.html)

els. The program takes into account all income and resources that an individual has and applies uniform standards and objective eligibility criteria to measure the need for assistance. These include:

- Medical determination of disability and blindness equivalent to that used by the DI program.<sup>18</sup>
- 65 as the minimum age requirement for assistance based on age.
- A limitation on the amount of income—including any Social Security benefits—and resources that an individual can have and still qualify for SSI benefits.<sup>19</sup>

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<sup>18</sup> Note that under SSI, there are no requirements relating to disability insured status or waiting period as set forth by the DI program.

<sup>19</sup> The *countable income* limits for individuals and couples are equal to their respective Federal benefit rates and are increased annually according to changes in the cost of living. Effective January 1, 2012, the Federal benefit rate is \$698 a month for individuals and \$1,048 a month for couples. The resource limit is \$2,000 in countable resources for individuals and \$3,000 for couples. For further details in areas such as income and resource exclusions and interaction with benefits from Social Security and other Federal or State-sponsored programs, refer to the *Annual Report of the Supplemental Security Income Program* [www.ssa.gov/OACT/SSIR](http://www.ssa.gov/OACT/SSIR)