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# Probabilities of Transition Among Health States for Older Adults

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## Unpublished Appendix Tables

This technical report has been published as Diehr P, Patrick DL. Probabilities of Transition among Health States for Older Adults. *Quality of Life Research* 10:431-442, 2001.

That published paper provides 2-year estimated transition probabilities among 6 health states (excellent, very good, good, fair, poor, and dead). Two tables are presented, one for persons aged 65 to 79, and another for ages 80 to 100. Here, we present ten appendix tables that were not published with that article. They include estimated transition probabilities in two-year age groups. For example, Table A1 shows 2-year transition probabilities for women initially in poor health. Women aged 65-66 (tabled as 65.5) have a 15% chance of being dead 2 years later, a 35% chance of remaining in poor health, and so on. In contrast, women aged 103-104 have a 56% chance of being dead in two years. The remaining nine tables show estimated probabilities for other initial health states (fair, good, very good, and excellent), and the same set of tables for men. These tables may permit the calculation of more tailored transition probabilities. The estimates for oldest and youngest persons are based on fewer observations and should be used with some caution.

The methods for estimating these probabilities are given in the cited publication and also in Diehr P, Patrick DL, Bild DE, Burke GL, Williamson JD. Predicting future years of healthy life for older adults. *J Clin Epidemiology* 51: 343-353. 1998.



	A1-TRANSITION PROBABILITIES (%) FEMALE, POOR HEALTH					
	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	.32	2.56	13.96	32.82	35.27	15.09
67.50	.29	2.66	14.82	30.95	32.88	18.39
69.50	.47	2.69	14.25	30.16	32.22	20.21
71.50	.45	2.59	12.51	30.17	29.76	24.52
73.50	.18	3.32	11.69	27.49	29.16	28.17
75.50	.65	2.44	12.27	28.08	29.34	27.21
77.50	.38	3.09	12.55	28.91	25.40	29.67
79.50	.13	2.78	11.95	27.59	21.27	36.28
81.50	.13	2.99	10.15	25.27	24.98	36.48
83.50	.12	2.42	9.44	24.16	24.30	39.56
85.50	.11	2.85	9.43	23.08	21.81	42.72
87.50	.10	3.40	9.26	20.77	23.00	43.48
89.50	.09	3.32	7.20	21.75	20.93	46.72
91.50	.07	2.39	6.84	20.01	21.81	48.87
93.50	.06	2.30	6.57	19.32	22.01	49.49
95.50	.04	2.25	5.67	17.97	22.70	51.12
97.50	.03	2.13	5.14	17.17	23.18	52.09
99.50	.03	2.02	4.66	16.65	22.51	53.89
101.50	.02	1.91	4.23	15.75	22.79	55.06
103.50	.01	1.79	3.80	15.00	23.24	55.90



	A2-TRANSITION PROBABILITIES (%) FEMALE, FAIR HEALTH					
	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	.80	7.26	41.50	42.26	4.72	3.47
67.50	.42	8.31	36.93	43.54	5.91	4.89
69.50	.48	6.29	32.97	49.34	6.26	4.65
71.50	.29	4.94	28.74	51.69	8.17	6.18
73.50	.55	4.66	28.52	50.15	8.91	7.21
75.50	.46	5.38	25.44	50.68	10.85	7.19
77.50	.74	6.61	24.85	47.70	10.82	9.28
79.50	.93	5.45	23.88	47.60	10.67	11.48
81.50	.59	4.66	22.89	45.84	10.58	15.44
83.50	.43	4.37	23.75	42.72	10.41	18.32
85.50	1.06	5.07	20.28	43.12	10.89	19.57
87.50	1.88	7.35	18.05	38.50	11.57	22.65
89.50	1.13	5.04	18.34	33.59	9.54	32.36
91.50	1.06	4.80	16.63	28.78	7.32	41.41
93.50	.87	4.98	13.85	22.21	6.98	50.87
95.50	.88	4.90	11.30	16.38	5.51	60.77
97.50	.81	3.72	9.75	11.69	3.55	70.22
99.50	.71	3.18	6.95	7.86	2.73	78.33
101.50	.59	2.59	5.10	5.08	1.62	84.76
103.50	.48	2.09	3.68	3.21	1.03	89.27



	A3-TRANSITION PROBABILITIES (%) FEMALE, GOOD HEALTH					
	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	3.11	26.07	51.79	16.21	1.59	1.23
67.50	2.76	21.15	59.39	13.91	1.89	.90
69.50	1.90	18.58	60.47	15.83	1.40	1.83
71.50	1.88	17.25	58.65	17.80	1.75	2.66
73.50	1.71	17.17	58.95	17.31	2.26	2.61
75.50	1.87	14.64	58.62	18.43	2.83	3.61
77.50	1.40	14.78	57.10	19.54	2.70	4.47
79.50	1.62	15.28	54.94	20.56	3.12	4.49
81.50	1.92	13.06	50.74	23.61	4.40	6.27
83.50	2.47	14.30	48.98	22.43	4.10	7.72
85.50	2.26	13.57	41.49	23.77	5.82	13.10
87.50	4.18	12.30	36.89	22.74	7.08	16.80
89.50	2.95	13.02	29.92	19.64	5.62	28.85
91.50	3.16	7.60	20.30	15.29	7.34	46.31
93.50	2.33	5.84	12.50	9.73	5.57	63.78
95.50	1.99	3.19	6.87	6.17	4.58	76.95
97.50	1.27	2.37	4.28	2.77	3.28	85.79
99.50	.86	1.07	1.70	2.35	1.95	91.81
101.50	.58	.41	.50	.63	1.47	96.17
103.50	.37	.19	.19	.28	.72	97.99



A4-TRANSITION PROBABILITIES (%) FEMALE, VERY GOOD HEALTH

	EXCELLE NT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	10.12	50.83	30.24	6.17	1.90	.74
67.50	7.60	52.68	32.87	4.77	1.18	.91
69.50	6.30	51.36	35.48	5.55	.69	.62
71.50	5.98	47.64	37.84	6.60	1.05	.89
73.50	5.82	48.97	36.85	5.72	1.21	1.44
75.50	5.28	43.37	40.52	7.14	1.61	2.08
77.50	6.28	42.01	39.61	8.32	1.73	2.05
79.50	5.39	38.97	37.99	10.90	2.96	3.79
81.50	5.21	37.82	39.34	10.72	3.05	3.85
83.50	6.57	38.48	34.93	11.11	2.70	6.21
85.50	4.85	34.73	31.72	13.00	5.25	10.45
87.50	5.96	27.02	28.36	13.85	6.27	18.54
89.50	4.61	20.85	19.95	12.30	7.57	34.74
91.50	2.88	13.73	11.50	9.31	8.26	54.33
93.50	1.57	5.23	5.20	4.26	6.74	76.75
95.50	.63	2.25	2.96	2.61	4.90	86.40
97.50	.27	.86	1.33	.94	3.51	92.84
99.50	.11	.19	.18	.64	2.28	96.35
101.50	.04	.06	.05	.15	1.46	97.99
103.50	.02	.02	.01	.06	.71	98.94



A5-TRANSITION PROBABILITIES (%) FEMALE, EXCELLENT HEALTH

	EXCELLENT	VERY GOOD	GOOD	FAIR	POOR	DEAD
	NT	GOOD				
65.50	35.44	44.35	18.12	1.25	.45	.39
67.50	41.01	37.39	17.79	2.02	1.49	.30
69.50	34.50	42.05	20.45	2.40	.39	.20
71.50	38.44	35.64	22.22	2.22	.76	.73
73.50	36.96	39.35	19.28	2.62	.67	1.11
75.50	31.58	38.40	22.02	6.12	.85	1.03
77.50	29.38	38.12	19.74	8.47	.90	3.41
79.50	32.44	35.12	21.98	6.99	.97	2.51
81.50	29.21	36.52	22.02	6.62	2.12	3.52
83.50	29.21	31.10	21.62	8.15	1.99	7.92
85.50	23.52	27.11	23.63	9.78	3.38	12.58
87.50	17.41	22.02	19.27	9.12	3.49	28.68
89.50	11.66	14.58	11.85	6.42	3.52	51.98
91.50	5.27	6.22	6.90	3.87	2.78	74.96
93.50	1.50	2.45	2.73	1.57	1.56	89.94
95.50	.44	.59	.75	.47	.84	96.67
97.50	.12	.41	.22	.15	.41	98.45
99.50	.03	.04	.06	.04	.19	99.39
101.50	.01	.01	.02	.01	.08	99.62
103.50	.00	.00	.00	.00	.04	99.70



	A6-TRANSITION PROBABILITIES (%)MALE, POOR HEALTH					
	EXCELLE	VERY	GOOD	FAIR	POOR	DEAD
	NT	GOOD				
65.50	.90	2.43	10.89	25.60	36.56	23.63
67.50	.88	2.16	11.12	25.25	33.40	27.18
69.50	1.25	2.64	10.38	23.43	29.81	32.50
71.50	.90	2.48	10.78	23.69	27.19	34.95
73.50	1.03	2.77	9.62	20.40	25.93	40.24
75.50	.77	3.13	8.16	18.87	25.42	43.65
77.50	.73	2.93	10.27	20.26	21.66	44.15
79.50	.67	2.65	7.62	19.32	22.13	47.62
81.50	.63	2.21	7.04	17.45	22.16	50.51
83.50	.31	2.42	6.65	17.10	16.18	57.34
85.50	.54	1.84	6.39	15.85	17.70	57.68
87.50	.25	1.85	5.66	15.23	19.50	57.52
89.50	.21	2.13	4.78	14.86	18.48	59.55
91.50	.17	2.32	4.19	12.69	18.85	61.78
93.50	.13	1.79	4.17	12.44	17.53	63.69
95.50	.10	1.72	3.61	12.29	17.33	64.70
97.50	.08	1.62	3.26	10.99	17.20	66.60
99.50	.06	1.53	2.96	10.50	17.46	67.25
101.50	.04	1.43	2.65	9.94	17.62	68.07
103.50	.03	1.33	2.37	9.41	17.87	68.73





A7-TRANSITION PROBABILITIES (%)MALE, FAIR HEALTH

	EXCELLE NT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	.56	9.30	38.38	37.65	5.39	8.73
67.50	.98	8.53	32.21	39.58	8.35	10.36
69.50	.97	7.90	32.83	41.08	8.60	8.62
71.50	.92	5.70	28.60	42.18	11.78	10.82
73.50	.33	6.14	27.09	43.05	10.70	12.69
75.50	1.01	5.97	25.28	41.48	9.60	16.67
77.50	1.30	5.39	22.77	41.03	10.77	18.74
79.50	1.25	4.66	22.68	41.43	12.83	17.15
81.50	.82	5.34	20.98	40.83	13.41	18.61
83.50	1.02	4.24	18.66	39.63	12.50	23.94
85.50	.91	4.78	19.22	30.77	13.56	30.76
87.50	.71	5.65	15.96	28.16	10.16	39.36
89.50	1.41	5.55	13.52	24.14	8.86	46.51
91.50	1.20	4.06	14.19	17.67	7.34	55.54
93.50	.96	3.96	10.38	14.71	5.64	64.10
95.50	.88	3.06	7.90	9.36	4.09	74.46
97.50	.78	2.64	5.61	6.68	2.76	81.29
99.50	.65	2.17	4.16	4.24	1.85	86.67
101.50	.53	1.73	2.99	2.68	1.18	90.64
103.50	.42	1.35	2.09	1.64	.73	93.51



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A8-TRANSITION PROBABILITIES (%)MALE, GOOD HEALTH						
	EXCELLE NT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	5.05	28.91	48.71	11.81	1.41	4.11
67.50	3.67	24.59	49.37	14.83	2.36	5.17
69.50	3.37	22.20	51.26	16.51	1.79	4.86
71.50	2.58	18.40	55.33	17.24	2.02	4.42
73.50	3.23	19.66	53.79	16.17	1.99	5.16
75.50	2.36	17.03	53.90	17.78	2.89	6.03
77.50	1.98	15.57	52.43	18.63	3.12	8.26
79.50	2.71	16.32	47.82	20.92	4.01	8.23
81.50	2.78	13.14	45.44	22.25	6.28	10.11
83.50	2.74	11.90	44.84	20.92	4.79	14.81
85.50	3.05	15.14	37.33	19.19	5.80	19.49
87.50	3.44	13.08	31.98	18.96	4.79	27.75
89.50	3.49	10.70	23.57	15.69	6.42	40.12
91.50	2.97	6.61	14.27	11.01	5.63	59.52
93.50	2.68	4.13	7.86	6.13	4.76	74.18
95.50	2.00	1.87	4.04	3.10	3.35	85.39
97.50	1.31	1.25	1.90	1.73	1.93	91.64
99.50	.71	.50	1.35	.72	1.23	95.23
101.50	.46	.24	.24	.33	.75	97.74
103.50	.29	.11	.09	.14	.44	98.67



	A9-TRANSITION PROBABILITIES (%)MALE, VERY GOOD HEALTH					
	EXCELLE NT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	14.86	48.84	26.96	6.12	.66	2.57
67.50	9.37	47.78	34.13	5.83	1.16	1.73
69.50	9.32	49.81	31.69	5.69	.75	2.75
71.50	6.89	49.60	33.04	5.88	1.31	3.27
73.50	6.66	48.60	33.74	6.24	1.43	3.34
75.50	6.51	45.67	36.95	5.90	1.18	3.78
77.50	5.74	41.70	36.90	8.38	1.34	5.95
79.50	5.67	39.80	37.48	8.08	2.20	6.77
81.50	5.33	41.92	32.17	10.90	2.51	7.17
83.50	5.67	38.52	29.85	10.44	4.28	11.23
85.50	4.53	31.54	30.61	13.31	3.79	16.22
87.50	3.87	23.80	26.59	10.69	4.32	30.72
89.50	4.76	17.32	14.87	6.76	6.93	49.36
91.50	3.70	7.57	8.16	4.09	4.24	72.24
93.50	1.06	3.35	3.64	2.85	3.84	85.02
95.50	.61	1.61	1.52	1.23	2.28	92.49
97.50	.15	.29	.51	.43	1.49	96.88
99.50	.06	.09	.08	.17	.91	98.43
101.50	.02	.03	.02	.07	.54	99.07
103.50	.01	.01	.01	.02	.31	99.39



A10-TRANSITION PROBABILITIES (%)MALE, EXCELLENT HEALTH

	EXCELLE NT	VERY GOOD	GOOD	FAIR	POOR	DEAD
65.50	38.75	40.54	16.88	2.16	.61	1.07
67.50	40.62	38.87	16.92	1.72	.68	1.19
69.50	35.48	41.65	19.17	2.39	.33	.98
71.50	33.87	42.83	17.26	3.21	1.41	1.41
73.50	35.60	40.04	17.98	3.83	.78	1.77
75.50	33.92	38.80	17.44	5.22	1.09	3.53
77.50	34.22	40.36	16.70	3.59	1.43	3.70
79.50	34.20	34.44	19.61	6.96	1.22	3.57
81.50	27.62	33.90	23.17	6.77	1.65	6.90
83.50	24.74	32.37	21.98	7.91	2.62	10.39
85.50	18.70	27.51	22.19	8.51	2.47	20.63
87.50	14.07	20.08	14.59	6.55	3.24	41.47
89.50	7.81	12.18	8.47	4.34	3.08	64.12
91.50	5.47	4.13	4.84	2.36	1.75	81.44
93.50	2.13	2.95	2.22	.73	1.00	90.72
95.50	.26	.61	.90	.26	1.03	96.70
97.50	.07	.10	.12	.08	.26	99.12
99.50	.02	.02	.28	.02	.12	99.28
101.50	.00	.01	.01	.01	.05	99.67
103.50	.00	.00	.00	.00	.02	99.72

