

Efficiency of Health Investment: Education or Intelligence?

Appendix

A Transition probabilities

From (2) and (3) we can derive the analytical solution of the transition probabilities:

$$\begin{aligned}
 P_{HH}(s, t) &= \frac{1}{\theta_1 - \theta_2} \left[(\lambda_{HI} + \lambda_{HD} + \theta_1) e^{\theta_2(t-s)} - (\lambda_{HI} + \lambda_{HD} + \theta_2) e^{\theta_1(t-s)} \right] \\
 P_{II}(s, t) &= \frac{1}{\theta_1 - \theta_2} \left[(\lambda_{HI} + \lambda_{HD} + \theta_1) e^{\theta_1(t-s)} - (\lambda_{HI} + \lambda_{HD} + \theta_2) e^{\theta_2(t-s)} \right] \\
 P_{HI}(s, t) &= \frac{\lambda_{HI}}{\theta_1 - \theta_2} \left[e^{\theta_1(t-s)} - e^{\theta_2(t-s)} \right] \\
 P_{IH}(s, t) &= \frac{\lambda_{IH}}{\theta_1 - \theta_2} \left[e^{\theta_1(t-s)} - e^{\theta_2(t-s)} \right]
 \end{aligned}$$

with two non-zero eigenvalues

$$\begin{aligned}
 \theta_1 &= -\frac{1}{2}(\lambda_{HI} + \lambda_{IH} + \lambda_{HD} + \lambda_{ID}) + \frac{1}{2}\sqrt{(\lambda_{HI} + \lambda_{HD} - \lambda_{IH} - \lambda_{ID})^2 + 4\lambda_{HI}\lambda_{IH}} \\
 \theta_2 &= -\frac{1}{2}(\lambda_{HI} + \lambda_{IH} + \lambda_{HD} + \lambda_{ID}) - \frac{1}{2}\sqrt{(\lambda_{HI} + \lambda_{HD} - \lambda_{IH} - \lambda_{ID})^2 + 4\lambda_{HI}\lambda_{IH}}
 \end{aligned}$$

and

$$\theta_1 - \theta_2 = \sqrt{(\lambda_{HI} + \lambda_{HD} - \lambda_{IH} - \lambda_{ID})^2 + 4\lambda_{HI}\lambda_{IH}}$$

The probability to die at age t , the transition to death, is $1 - P_{HH}(s, t) - P_{HI}(s, t)$ for an individual who is healthy at s and $1 - P_{IH}(s, t) - P_{II}(s, t)$ for an individual ill at s .

Kalbfleisch et al. (1983) derive the derivatives of $P(t)$ (provided that $\theta_1 \neq \theta_2 \neq 0$). For $k \in \{HI, HD, IH, ID\}$ we have

$$\frac{\partial P(s, t)}{\partial \lambda_k} = VG_k V^{-1} \tag{A.1}$$

where $G_k(t)$ is and 3 x 3 matrix with (i, j) th element is $M_{ij}^{(k)}$ times $A_{ij}(s, t)$ with

$$A(s, t) = \begin{pmatrix} (t-s)e^{\theta_1(t-s)} & \frac{e^{\theta_1(t-s)} - e^{\theta_2(t-s)}}{\theta_1 - \theta_2} & 0 \\ \frac{e^{\theta_1(t-s)} - e^{\theta_2(t-s)}}{\theta_1 - \theta_2} & (t-s)e^{\theta_2(t-s)} & 0 \\ 0 & 0 & 0 \end{pmatrix}$$

and $M_{ij}^{(k)}$ is the (i, j) th element of $V^{-1}(\partial M / \partial \lambda_k)V$. The $\partial M / \partial \lambda_k$ matrices are very simple. e.g.

$$\frac{\partial M}{\partial \lambda_{ID}} = \begin{pmatrix} 0 & 0 & 0 \\ 0 & -1 & 1 \\ 0 & 0 & 0 \end{pmatrix}$$

B Likelihood

The likelihood contribution of the first spell (either healthy to hospitalized or healthy to death) for individual i , who is only observed (left-truncated) after t_{i0} , is given by

$$\begin{aligned} L_{i1} &= \int \left[\Phi(\gamma X_i^E + \alpha_E \theta) \cdot \lambda_{HI}^{(1)}(t_i | X^H, \theta)^{\Delta_{HIi}} \lambda_{HD}^{(1)}(t_i | X^H, \theta)^{\Delta_{HDi}} \cdot \right. \\ &\quad \left. S_H^{(1)}(t_i | X, \theta) / S_H^{(1)}(t_{i0} | X, \theta) \right]^{E_i} \\ &\quad \times \left[\Phi(-\gamma X_i^E - \alpha_E \theta) \cdot \lambda_{HI}^{(0)}(t_i | X^H, \theta)^{\Delta_{HIi}} \lambda_{HD}^{(0)}(t_i | X^H, \theta)^{\Delta_{HDi}} \cdot \right. \\ &\quad \left. S_H^{(0)}(t_i | X, \theta) / S_H^{(0)}(t_{i0} | X, \theta) \right]^{1-E_i} \frac{1}{\sigma_M} \phi\left(\frac{M_i - \delta_1 X_i^M - \alpha_M \theta}{\sigma_M}\right) dH(\theta | T > t_{i0}) \end{aligned}$$

with $\Delta_{HIi} = 1$ if individual i enters hospital before dying and $\Delta_{HDi} = 1$ if individual i dies before entering hospital. The ‘total’ survival of individual i , the probability that he survives and stays out of hospital up till age t_i is

$$S_H^{(k)}(t | X, \theta) = \exp\left(-\int_0^t \lambda_{HI}^{(k)}(s | X^H, \theta) + \lambda_{HD}^{(k)}(s | X^H, \theta) ds\right) \quad k = 0, 1$$

The distribution of the latent skills conditional on survival up to t_{i0} is

$$\begin{aligned} dH(\theta | T > t_{i0}) &= \\ &= \frac{\Phi(\gamma X_i^E + \alpha_E \theta) S_H^{(1)}(t_{i0} | X, \theta) + \Phi(-\gamma X_i^E - \alpha_E \theta) S_H^{(0)}(t_{i0} | X, \theta) h(\theta)}{\int \Phi(\gamma X_i^E + \alpha_E \theta) S_H^{(1)}(t_{i0} | X, \theta) + \Phi(-\gamma X_i^E - \alpha_E \theta) S_H^{(0)}(t_{i0} | X, \theta) h(\theta) d\theta} \end{aligned}$$

The second spell in the multistate model (only for those who have not died) is either from hospitalized back to healthy or from hospitalized to death. Let $\tau_{i1} = t_{2i} - t_{1i}$,

the time since entry to the hospital. Then, the likelihood contribution of the second spell is

$$L_{i2} = \frac{\int f_2(\tau_{i1}|t_{i1}, X, \theta) \left[\Phi(\gamma X_i^E + \alpha_E \theta) S_H^{(1)}(t_{i1}|X, \theta) + \Phi(-\gamma X_i^E - \alpha_E \theta) S_H^{(0)}(t_{i1}|X, \theta) \right] h(\theta) d\theta}{\int \left[\Phi(\gamma X_i^E + \alpha_E \theta) S_H^{(1)}(t_{i1}|X, \theta) + \Phi(-\gamma X_i^E - \alpha_E \theta) S_H^{(0)}(t_{i1}|X, \theta) \right] h(\theta) d\theta}$$

with

$$f_{i2}(\tau_{i1}|t_{i1}, X, \theta) = \left[\lambda_{IH}^{(1)}(\tau_{i1}|X^I, t_{i1}, \theta)^{\Delta_{IH}i} \lambda_{ID}^{(1)}(\tau_{i1}|X^I, t_{i1}, \theta)^{\Delta_{ID}i} S_I^{(1)}(t_{i2}|X, \theta) / S_I^{(1)}(t_{i1}|X, \theta) \right]^{E_i} \\ \times \left[\lambda_{IH}^{(0)}(\tau_{i1}|X^I, t_{i1}, \theta)^{\Delta_{IH}i} \lambda_{ID}^{(0)}(\tau_{i1}|X^I, t_{i1}, \theta)^{\Delta_{ID}i} S_I^{(0)}(t_{i2}|X, \theta) / S_I^{(0)}(t_{i1}|X, \theta) \right]^{1-E_i}$$

with $\Delta_{IH}i = 1$ if individual i leaves hospital before dying and $\Delta_{ID}i = 1$ if individual i dies in hospital and for $k = 0, 1$

$$S_I^{(k)}(t_{i2}|X, \theta) = S_H^{(k)}(t_{i1}|X, \theta) \exp\left(-\int_{t_{i1}}^{t_{i2}} \lambda_{IH}^{(k)}(s|X^I, \theta) + \lambda_{ID}^{(k)}(s|X^I, \theta) ds\right)$$

The (possible) third spell in the multistate model is either from healthy back to hospitalized or from healthy to death. Then, the likelihood contribution of the third spell is

$$L_{i3} = \frac{\int f_3(t_{i3}|\theta) \left[\Phi(\gamma X_i^E + \alpha_E \theta) S^{(1)}(t_{i2}|X, \theta) + \Phi(-\gamma X_i^E - \alpha_E \theta) S^{(0)}(t_{i2}|X, \theta) \right] h(\theta) d\theta}{\int \left[\Phi(\gamma X_i^E + \alpha_E \theta) S^{(1)}(t_{i2}|X, \theta) + \Phi(-\gamma X_i^E - \alpha_E \theta) S^{(0)}(t_{i2}|X, \theta) \right] h(\theta) d\theta}$$

with

$$f_3(t_{i3}|t_{i2}, X, \theta) = \left[\lambda_{HI}^{(1)}(t_{i3}|X, \theta)^{\Delta_{HI}i} \lambda_{HD}^{(1)}(t_{i3}|X, \theta)^{\Delta_{HD}i} S^{(1)}(t_{i3}|X, \theta) / S^{(1)}(t_{i2}|X, \theta) \right]^{E_i} \\ \times \left[\lambda_{HI}^{(0)}(t_{i3}|X, \theta)^{\Delta_{HI}i} \lambda_{HD}^{(0)}(t_{i3}|X, \theta)^{\Delta_{HD}i} S^{(0)}(t_{i3}|X, \theta) / S^{(0)}(t_{i2}|X, \theta) \right]^{1-E_i}$$

$\Delta_{HI}i = 1$ if individual i enters (for the second time) hospital before dying and $\Delta_{HD}i = 1$ if individual i dies before entering hospital (for the second time) and for $k = 0, 1$

$$S^{(k)}(t_{i3}|X, \theta) = S_I^{(k)}(t_{i2}|X, \theta) \frac{S_{HI}^{(k)}(t_{i3}|X, \theta) S_{HD}^{(k)}(t_{i3}|X, \theta)}{S_{HI}^{(k)}(t_{i2}|X, \theta) S_{HD}^{(k)}(t_{i2}|X, \theta)}$$

The likelihood contributions for fourth and later spells are similar. The full likelihood (of individual i) is the product of all these terms, L_{i1}, L_{i2}, L_{i3} , etc.

C Additional Tables

Table C.1: Transition probabilities within one year by education

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	<i>model without covariates</i>							
55	3.9%	2.7%*	95.8%	97.1%*	0.7%	0.4%*	99.0%	99.4%*
60	4.2%	2.8%*	95.5%	97.0%*	1.0%	0.6%*	98.7%	99.2%*
65	4.7%	3.2%*	95.0%	96.6%*	1.5%	1.0%*	98.2%	98.8%*
70	5.6%	3.7%*	94.1%	96.1%*	2.5%	1.6%*	97.2%	98.2%*
75	7.3%	4.7%*	92.4%	95.1%*	4.3%	2.6%*	95.4%	97.2%*
age	<i>Stratified model, reference individual</i>							
55	0.3%	0.2%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
60	0.5%	0.3%	99.5%	99.7%	0.3%	0.2%	99.6%	99.8%
65	0.7%	0.4%	99.2%	99.6%	0.5%	0.3%	99.4%	99.7%
70	1.1%	0.5%*	98.8%	99.4%*	1.0%	0.4%*	98.9%	99.5%*
75	2.0%	0.7%*	97.9%	99.2%*	1.9%	0.6%*	98.1%	99.3%*
age	<i>Structural model, reference individual</i>							
55	0.2%	0.2%	99.7%	99.8%	0.0%	0.0%	99.9%	99.9%
60	0.3%	0.2%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
65	0.5%	0.4%	99.5%	99.6%	0.3%	0.2%	99.6%	99.7%
70	0.9%	0.6%	99.1%	99.4%	0.8%	0.5%	99.2%	99.5%
75	1.8%	1.0%	98.2%	98.9%	1.7%	0.9%	98.3%	99.0%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

* $p < 0.05$ of difference.

Table C.2: Parameter estimates structural model by education level, transition rates from hospitalized

	Primary education		Above primary	
	to healthy	to death	to healthy	to death
Intelligence	0.092 ⁺ (0.044)	0.238 (0.183)	0.116** (0.038)	0.129 (0.138)
Male	-0.062 (0.116)	0.062 (0.594)	0.056 (0.051)	0.095 (0.336)
Child is working - base is "No"				
Yes	-0.494** (0.121)	0.246 (0.657)	0.084 (0.057)	-0.669 (0.459)
Missing	-0.068 (0.229)	-0.320 (1.179)	0.045 (0.087)	-0.999 (0.669)
Birthrank - base is "First"				
Second	-0.066 (0.205)	-	-0.100 (0.074)	0.829 (0.458)
Third or Fourth	-0.096 (0.185)	-	-0.176** (0.069)	-0.030 (0.493)
Fifth or higher	-0.045 (0.187)	-	-0.187** (0.067)	0.214 (0.462)
Missing	-0.288 (0.279)	-	-0.330** (0.123)	0.593 (0.847)
Health status in 1993 - base is "good"				
Poor health	-0.153 (0.135)	0.079 (0.669)	-0.196** (0.066)	-0.270 (0.440)
Previous hospitalization and last diagnosis				
Repeated admittance	0.127 (0.124)	1.562 (0.845)	0.073 (0.055)	0.736 (0.389)
Neoplasm	-0.297 (0.188)	1.534 ⁺ (0.670)	-0.263** (0.071)	2.740** (0.504)
Circulatory	0.047 (0.139)	0.436 (0.793)	-0.074 (0.061)	0.648 (0.581)
Respiratory	-0.309 (0.203)	-	0.178 (0.120)	1.572 ⁺ (0.738)
Digestive	0.030 (0.171)	-	0.247** (0.080)	1.288 (0.676)
Acute	-0.406** (0.107)	1.352 (0.779)	-0.340** (0.049)	1.458** (0.368)
(log) constant	-1.576 (0.228)	-7.983 (1.157)	-1.837 (0.074)	-8.626 (0.715)

^b Duration time from hospitalized is days since hospital admission.

⁺ $p < 0.05$ and $**p < 0.01$

Table C.2: Parameter estimates structural model by education level, transition rates *from healthy*

	Primary education		Above primary	
	to hospitalized	to death	to hospitalized	to death
Intelligence	-0.537** (0.159)	-0.142 (0.137)	-0.561** (0.161)	-0.649** (0.196)
Male	-0.256 (0.147)	0.750** (0.301)	0.238** (0.067)	0.717** (0.137)
Child is working - base is "No"				
Yes	0.315 (0.164)	0.160 (0.282)	0.076 (0.073)	0.756** (0.151)
Missing	0.072 (0.319)	-2.005 ⁺ (0.789)	0.003 (0.114)	0.261 (0.160)
Family Socioeconomic Status - base is "Low"				
Middle	-0.029 (0.184)	-0.035 (0.339)	-0.224** (0.065)	-0.012 (0.142)
High	-0.029 (0.184)	-0.035 (0.339)	0.198 (0.195)	0.487 (0.371)
Missing	-0.698 ⁺ (0.328)	-0.462 (0.661)	0.010 (0.153)	0.535 (0.334)
Birthrank - base is "First"				
Second	0.758 ⁺ (0.302)	-0.355 (0.440)	0.107 (0.096)	-0.011 (0.192)
Third or Fourth	1.034** (0.286)	-0.117 (0.413)	0.105 (0.085)	-0.157 (0.183)
Fifth or higher	0.659 ⁺ (0.265)	0.073 (0.383)	0.113 (0.086)	-0.343 (0.189)
Missing	1.368** (0.437)	1.375 ⁺ (0.651)	-0.103 (0.166)	-0.835 ⁺ (0.396)
Health status in 1993 - base is "good"				
Poor health	0.739** (0.221)	-0.352 (0.535)	0.463** (0.089)	0.350 (0.204)
Missing	-0.158 (0.174)	0.590 (0.318)	0.077 (0.069)	0.160 (0.150)
Hospitalization and last diagnosis				
Has been in hospital	0.397 ⁺ (0.203)	0.364 (0.369)	0.849** (0.071)	0.278 (0.171)
Neoplasm	1.151** (0.254)	1.871** (0.553)	1.184** (0.100)	2.073** (0.188)
Circulatory	0.555** (0.185)	0.104 (0.438)	0.636** (0.083)	0.732** (0.198)
Respiratory	0.248 (0.272)	1.663** (0.545)	0.254 (0.181)	0.204 (0.449)
Digestive	0.394 (0.245)	0.168 (0.560)	-0.053 (0.124)	-0.102 (0.288)
(log) constant	-3.779 (0.366)	-15.990 (2.164)	-3.396 (0.088)	-14.901 (1.069)
Age	-	0.159 (0.031)	-	0.137 (0.016)

^a Duration time from healthy is years since birth.

⁺ $p < 0.05$ and ** $p < 0.01$

Table C.2: Parameter estimates structural model by education level (continued)

	Education ^c	Raven test ^d
Intelligence	0.137 ⁺ (0.063)	1
Male	-0.252** (0.083)	-0.887 (0.528)
Child is working - base is "No"		
Yes	-0.207 ⁺ (0.091)	-3.767** (0.627)
Missing	-0.281 ⁺ (0.137)	-1.103 (0.899)
Family Socioeconomic Status - base is "Low"		
Middle	0.361** (0.094)	2.570** (0.543)
High	0.396 (0.453)	4.242** (1.636)
Missing	-0.511** (0.175)	-4.342** (1.294)
Birthrank - base is "First"		
Second	-0.137 (0.122)	0.468 (0.785)
Third or Fourth	-0.074 (0.113)	-0.263 (0.733)
Fifth or higher	-0.057 (0.111)	-3.053** (0.729)
Missing	0.104 (0.304)	-0.654 (1.469)
School religion - base is "Catholic"		
Protestant	0.311** (0.106)	0.626 (0.682)
Other	0.388 ⁺ (0.195)	5.051** (1.124)
Number of teachers - base is "5-8 teachers"		
≤ 4	-0.147 (0.100)	-3.837** (0.725)
9-12	0.058 (0.096)	0.410 (0.631)
Missing	0.314 (0.215)	0.843 (1.298)
Constant	2.109 (0.206)	3.621 (0.741)

^c Education choice probit model.

^d IQ-measurement linear model, centered around IQ = 100.

⁺ $p < 0.05$ and ****** $p < 0.01$

Table C.2: Parameter estimates structural model by education level (continued)

	Education ^c	Raven test ^d	θ
Teacher's advice - base is "Lower vocational school"			
Continued primary school	-0.264**		
	(0.090)		
Lower general secondary school	0.459**		
	(0.165)		
Higher general secondary school	0.538 ⁺		
	(0.255)		
Missing	-0.543 ⁺		
	(0.250)		
Repeat grade - base is "None"			
Once	-0.295**		
	(0.087)		
Twice	-0.709**		
	(0.118)		
Missing	0.751		
	(0.411)		
Preference of the parents - base is "Only vocational education"			
Work in own company	-0.885**		
	(0.190)		
Work without education	-1.357**		
	(0.185)		
Work with education	-0.921**		
	(0.198)		
General secondary school	-0.345		
	(0.179)		
Missing	-0.923**		
	(0.184)		
Distribution of θ			
θ_1			-5.310
			(1.525)
θ_2			0.426
			(0.129)
θ_3			-2.628
			(0.758)
p_1			0.012
			(0.003)
p_2			0.871
			(0.002)
p_3			0.118
			(0.015)

^c Education choice probit model.

^d IQ-measurement linear model.

⁺ $p < 0.05$ and ^{**} $p < 0.01$

Table C.3: Transition probability within one year by education and diagnosis, stratified model

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	diagnosis: <i>neoplasm</i>							
55	5.3%	7.1%	94.0%	91.9%	2.4%	3.2%	96.8%	95.7%
60	6.4%	7.8%	92.8%	91.2%	3.7%	4.0%	95.6%	95.0%
65	8.5%	8.9%	90.8%	90.0%	5.9%	5.2%	93.4%	93.7%
70	12.3%	10.7%	87.0%	88.3%	9.8%	7.0%	89.4%	91.9%
75	18.9%	13.3%	80.4%	85.7%	16.8%	9.8%*	82.5%	89.1%
age	diagnosis: <i>circulatory diseases</i>							
55	1.4%	0.9%	98.2%	98.6%	0.5%	0.5%	99.1%	99.1%
60	1.7%	1.1%	98.0%	98.4%	0.7%	0.7%	98.9%	98.8%
65	2.1%	1.4%	97.5%	98.1%	1.1%	1.0%	98.5%	98.5%
70	2.8%	1.9%	96.8%	97.6%	1.9%	1.5%	97.7%	98.0%
75	4.3%	2.7%	95.4%	96.9%	3.4%	2.3%	96.2%	97.2%
age	diagnosis: <i>respiratory diseases</i>							
55	2.7%	1.4%	96.2%	98.2%	2.0%	0.5%	96.9%	99.1%
60	4.0%	1.5%	94.9%	98.1%	3.3%	0.7%	95.6%	98.9%
65	6.4%	1.8%*	92.5%	97.8%*	5.8%	1.0%*	93.1%	98.6%*
70	10.7%	2.2%*	88.2%	97.4%*	10.3%	1.4%*	88.7%	98.2%*
75	18.2%	2.9%*	80.8%	96.7%*	18.0%	2.1%*	81.0%	97.5%*
age	diagnosis: <i>digestive diseases</i>							
55	0.9%	0.9%	98.9%	98.9%	0.4%	0.3%	99.3%	99.5%
60	1.1%	1.0%	98.6%	98.8%	0.6%	0.4%	99.1%	99.4%
65	1.5%	1.2%	98.2%	98.6%	1.1%	0.7%	98.6%	99.2%
70	2.3%	1.5%	97.4%	98.3%	1.9%	1.0%	97.8%	98.9%
75	3.8%	2.0%	95.9%	97.8%	3.4%	1.4%*	96.3%	98.4%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

Based on structural model * $p < 0.05$ of difference.

Table C.4: Transition probability within one year by education and diagnosis, structural model

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	diagnosis: <i>neoplasm</i>							
55	5.2%	5.8%	94.7%	93.7%	1.1%	1.7%	98.8%	97.8%
60	5.9%	6.4%	93.9%	93.1%	1.9%	2.3%	98.0%	97.2%
65	7.5%	7.5%	92.3%	92.0%	3.6%	3.5%	96.3%	96.0%
70	11.0%	9.8%	88.9%	89.8%	7.3%	5.6%	92.6%	93.6%
75	18.2%	14.0%	81.6%	85.6%	14.9%	10.4%	85.0%	89.1%
age	diagnosis: <i>circulatory diseases</i>							
55	1.1%	0.7%	98.8%	99.1%	0.2%	0.2%	99.8%	99.5%
60	1.3%	0.8%	98.6%	98.9%	0.3%	0.4%	99.6%	99.3%
65	1.6%	1.1%	98.3%	98.6%	0.6%	0.7%	99.3%	99.0%
70	2.2%	1.8%	97.7%	98.0%	1.3%	1.4%	98.7%	98.4%
75	3.7%	3.0%	96.3%	96.7%	2.8%	2.6%	97.2%	97.1%
age	diagnosis: <i>respiratory diseases</i>							
55	1.5%	1.1%	98.4%	98.8%	0.6%	0.2%	99.4%	99.7%
60	2.2%	1.2%	97.8%	98.7%	1.2%	0.3%	98.7%	99.6%
65	3.5%	1.3%*	96.5%	98.5%*	2.6%	0.5%*	97.3%	99.4%*
70	6.4%	1.7%*	93.5%	98.2%*	5.6%	0.9%*	94.3%	99.0%*
75	12.7%	2.5%*	87.3%	97.4%*	12.0%	1.6%*	87.9%	98.3%*
age	diagnosis: <i>digestive diseases</i>							
55	0.8%	0.7%	99.1%	99.2%	0.2%	0.1%	99.8%	99.8%
60	1.0%	0.8%	99.0%	99.1%	0.3%	0.2%	99.6%	99.7%
65	1.3%	0.9%	98.7%	99.0%	0.6%	0.3%	99.3%	99.6%
70	2.0%	1.2%	98.0%	98.7%	1.3%	0.6%	98.6%	99.3%
75	3.5%	1.8%*	96.5%	98.1%	2.9%	1.2%*	97.1%	98.7%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

Based on structural model * $p < 0.05$ of difference.

Table C.5: Transition probability within one year by education and diagnosis, females

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	Stratified model: reference individual							
55	0.5%	0.3%	99.4%	99.7%	0.3%	0.2%	99.6%	99.7%
60	0.7%	0.5%	99.2%	99.5%	0.6%	0.3%	99.3%	99.6%
65	1.2%	0.6%*	98.7%	99.3%	1.1%	0.5%*	98.8%	99.4%
70	2.2%	0.9%*	97.8%	99.0%*	2.1%	0.8%*	97.9%	99.1%*
75	3.8%	1.4%*	96.1%	98.6%*	3.8%	1.3%*	96.1%	98.7%*
age	Structural model: reference individual							
55	0.3%	0.3%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
60	0.5%	0.4%	99.5%	99.6%	0.3%	0.3%	99.6%	99.7%
65	0.9%	0.6%	99.1%	99.3%	0.7%	0.5%	99.2%	99.4%
70	1.8%	1.1%	98.2%	98.8%	1.6%	1.0%	98.4%	98.9%
75	3.6%	2.1%	96.3%	97.8%	3.5%	2.0%	96.5%	97.9%
age	Structural model diagnosis: <i>neoplasm</i>							
55	6.3%	6.9%	93.6%	92.5%	1.8%	2.7%	98.1%	96.7%
60	7.9%	8.2%	92.0%	91.3%	3.3%	4.0%	96.5%	95.4%
65	11.2%	10.5%	88.7%	88.9%	6.9%	6.6%	93.0%	92.9%
70	18.1%	15.0%	81.8%	84.4%	14.3%	11.4%	85.6%	88.1%
75	31.5%	23.3%	68.4%	76.2%	28.5%	20.2%	71.4%	79.4%
age	Structural model diagnosis: <i>circulatory diseases</i>							
55	1.4%	0.9%	98.5%	98.8%	0.3%	0.4%	99.7%	99.3%
60	1.7%	1.2%	98.2%	98.5%	0.6%	0.8%	99.4%	98.9%
65	2.3%	1.9%	97.6%	97.8%	1.2%	1.5%	98.7%	98.2%
70	3.7%	3.2%	96.3%	96.5%	2.6%	2.8%	97.4%	96.9%
75	6.6%	5.8%	93.4%	93.9%	5.6%	5.5%	94.4%	94.2%
age	Structural model diagnosis: <i>respiratory diseases</i>							
55	2.2%	1.2%	97.8%	98.6%	1.2%	0.3%	98.8%	99.5%
60	3.5%	1.4%*	96.5%	98.4%	2.5%	0.5%*	97.4%	99.3%
65	6.3%	1.8%*	93.6%	98.0%*	5.4%	0.9%*	94.5%	98.9%*
70	12.3%	2.6%*	87.7%	97.2%*	11.5%	1.8%*	88.4%	98.1%*
75	24.1%	4.2%*	75.8%	95.7%*	23.7%	3.3%*	76.3%	96.5%*
age	Structural model diagnosis: <i>digestive diseases</i>							
55	1.0%	0.9%	98.9%	99.0%	0.3%	0.2%	99.7%	99.7%
60	1.3%	1.0%	98.6%	98.9%	0.6%	0.4%	99.4%	99.5%
65	2.0%	1.3%	98.0%	98.6%	1.3%	0.7%	98.7%	99.2%
70	3.4%	1.9%	96.5%	98.0%	2.7%	1.3%	97.2%	98.6%
75	6.5%	3.0%*	93.4%	96.9%	5.9%	2.4%*	94.1%	97.5%*

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

* $p < 0.05$ of difference.

Table C.6: Transition probability within one year by education and diagnosis, model with no endogenous variables (diagnoses)

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
	Stratified model: reference individual							
age								
55	0.7%	0.3%	98.2%	99.5%	0.4%	0.2%	99.5%	99.7%
60	1.0%	0.5%	98.9%	99.4%	0.7%	0.3%	99.2%	99.5%
65	1.6%	0.7%*	98.3%	99.2%	1.3%	0.5%*	98.6%	99.3%
70	2.6%	1.1%*	97.3%	98.8%*	2.3%	0.9%*	97.6%	98.9%*
75	4.6%	1.8%*	95.3%	98.1%*	4.4%	1.7%*	95.5%	98.2%*
	Structural model: reference individual							
age								
55	0.5%	1.3%*	99.5%	98.6%*	0.1%	0.1%	99.8%	99.8%
60	0.6%	1.4%*	99.3%	98.5%*	0.3%	0.2%	99.7%	99.7%
65	1.0%	1.6%*	99.0%	98.3%*	0.7%	0.4%	99.3%	99.5%
70	1.8%	2.0%	98.2%	98.0%	1.5%	0.8%*	98.5%	99.1%
75	3.5%	2.7%	96.5%	97.3%	3.2%	1.5%*	96.8%	98.4%*

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

* $p < 0.05$ of difference.

Table C.7: Transition probability within one year by education and diagnosis, model with 3 education levels (stratified model)

	(0) ^a	(1) ^b	(2) ^c	(0) ^a	(1) ^b	(2) ^c
reference individual						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	0.3%	0.2%	0.2%	99.6%	99.7%	99.8%
60	0.5%	0.3%	0.2%	99.5%	99.7%	99.7%
65	0.7%	0.3%	0.3%	99.2%	99.6%	99.6%
70	1.1%	0.5%*	0.5%	98.8%	99.5%*	99.4%
75	2.0%	0.7%*	0.8%	97.9%	99.3%*	99.1%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.2%	0.1%	0.1%	99.8%	99.8%	99.8%
60	0.3%	0.2%	0.2%	99.6%	99.8%	99.8%
65	0.5%	0.2%	0.3%	99.4%	99.7%	99.7%
70	1.0%	0.4%*	0.5%	98.9%	99.6%*	99.5%
75	1.9%	0.6%*	0.8%	98.1%	99.4%*	99.2%
diagnosis: <i>neoplasm</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	5.3%	5.7%	6.3%	94.0%	93.3%	92.4%
60	6.4%	6.6%	6.8%	92.8%	92.4%	91.9%
65	8.5%	7.8%	7.6%	90.8%	91.2%	91.1%
70	12.3%	9.8%	9.0%	87.0%	89.3%	89.8%
75	18.9%	12.6%	11.1%	80.4%	86.5%	87.6%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	2.4%	2.9%	2.5%	96.8%	96.1%	96.2%
60	3.7%	3.8%	3.0%	95.6%	95.2%	95.6%
65	5.9%	5.1%	3.9%	93.4%	93.8%	94.7%
70	9.8%	7.2%	5.4%	89.4%	91.8%	93.3%
75	16.7%	10.2%	7.7%	82.5%	88.9%	91.0%
diagnosis: <i>circulatory diseases</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	1.4%	0.8%	1.7%	98.2%	98.7%	98.0%
60	1.7%	1.0%	1.8%	98.0%	98.5%	98.0%
65	2.1%	1.4%	2.0%	97.5%	98.1%	97.8%
70	2.8%	1.9%	2.2%	96.8%	97.6%	97.6%
75	4.3%	2.7%	2.6%	95.4%	96.8%	97.2%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.5%	0.5%	0.3%	99.1%	99.0%	99.5%
60	0.7%	0.8%	0.4%	98.9%	98.8%	99.4%
65	1.1%	1.2%	0.6%	98.5%	98.4%	99.2%
70	1.9%	1.7%	0.8%	97.7%	97.8%	99.0%
75	3.4%	2.5%	1.2%	96.2%	97.0%	98.6%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, secondary education.

^c Transition probability for $E = 2$, higher education.

* $p < 0.05$ of difference of adjacent education levels.

Table C.7: (continued)

	(0) ^a	(1) ^b	(2) ^c	(0) ^a	(1) ^b	(2) ^c
diagnosis: <i>respiratory diseases</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	2.7%	1.2%	0.4%	96.2%	98.3%	99.6%
60	4.0%	1.5%	0.5%	94.9%	98.1%	99.4%
65	6.4%	1.8%*	0.7%	92.5%	97.8%	99.2%
70	10.7%	2.3%*	1.0%	88.2%	97.3%*	98.9%
75	18.2%	3.0%*	1.6%	80.8%	96.5%*	98.4%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	2.0%	0.6%	0.2%	96.9%	99.0%	99.7%
60	3.3%	0.8%	0.3%	95.6%	98.8%	99.6%
65	5.8%	1.1%*	0.5%	93.1%	98.4%	99.4%
70	10.3%	1.6%*	0.9%	88.7%	97.9%*	99.0%
75	18.0%	2.4%*	1.4%	81.0%	97.1%*	98.5%
diagnosis: <i>digestive diseases</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	0.9%	0.8%	0.3%	98.9%	99.0%	99.6%
60	1.1%	1.0%	0.3%	98.6%	98.8%	99.6%
65	1.5%	1.2%	0.4%	98.2%	98.6%	99.5%
70	2.3%	1.5%	0.5%*	97.4%	98.3%	99.4%
75	3.8%	2.0%	0.7%*	95.9%	97.8%	99.2%*
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.4%	0.3%	0.1%	99.3%	99.5%	99.8%
60	0.6%	0.5%	0.1%	99.1%	99.3%	99.8%
65	1.1%	0.7%	0.2%	98.6%	99.1%	99.7%
70	1.9%	1.1%	0.3%	97.8%	98.7%	99.6%
75	3.4%	1.6%	0.5%*	96.3%	98.2%	99.4%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, secondary education.

^c Transition probability for $E = 2$, higher education.

* $p < 0.05$ of difference of adjacent education levels.

Table C.8: Transition probability within one year by education and diagnosis, model with 3 education levels (structural model)

	(0) ^a	(1) ^b	(2) ^c	(0) ^a	(1) ^b	(2) ^c
reference individual						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	0.3%	0.1%	0.4%	99.7%	99.9%	99.5%
60	0.3%	0.1%	0.5%	99.6%	99.8%	99.5%
65	0.5%	0.2%	0.6%	99.4%	99.7%	99.4%
70	1.0%	0.3%*	0.9%	99.0%	99.6%	99.1%
75	1.9%	0.6%*	1.4%	98.1%	99.3%*	98.6%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.1%	0.1%	0.1%	99.9%	99.9%	99.9%
60	0.2%	0.1%	0.1%	99.8%	99.8%	99.8%
65	0.4%	0.2%	0.3%	99.6%	99.8%	99.7%
70	0.8%	0.3%*	0.5%	99.2%	99.6%	99.4%
75	1.8%	0.6%*	1.0%	98.2%	99.3%*	98.9%
diagnosis: <i>neoplasm</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	5.6%	4.2%	5.8%	94.1%	95.4%	93.8%
60	6.3%	4.6%	6.7%*	93.4%	95.0%	92.9%
65	8.0%	5.4%	8.5%*	91.7%	94.2%	91.1%*
70	11.6%	6.9%*	12.1%*	88.1%	92.7%	87.6%*
75	19.1%	9.6%*	18.9%*	80.6%	90.1%	80.8%*
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	1.4%	1.3%	1.7%	98.3%	98.3%	97.9%
60	2.2%	1.7%	2.7%	97.5%	97.9%	96.9%
65	4.0%	2.5%	4.6%	95.7%	97.0%	95.0%
70	7.8%	4.1%	8.4%*	91.9%	95.5%	91.2%*
75	15.8%	6.9%*	15.6%*	84.0%	92.7%*	84.0%*
diagnosis: <i>circulatory diseases</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	1.3%	0.3%	2.2%*	98.6%	99.5%	97.7%*
60	1.4%	0.4%	2.4%*	98.5%	99.3%	97.5%*
65	1.7%	0.7%	2.8%*	98.2%	99.1%	97.0%*
70	2.3%	1.1%	3.7%*	97.5%	98.6%	96.1%*
75	3.8%	2.0%	5.5%*	96.1%	97.7%	94.3%*
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.2%	0.2%	0.4%	99.7%	99.5%	99.4%
60	0.3%	0.3%	0.7%	99.5%	99.4%	99.2%
65	0.6%	0.6%	1.1%	99.2%	99.1%	98.7%
70	1.3%	1.1%	2.0%	98.6%	98.6%	97.8%
75	2.7%	2.0%	3.9%	97.1%	97.7%	95.9%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, secondary education.

^c Transition probability for $E = 2$, higher education.

* $p < 0.05$ of difference of adjacent education levels.

Table C.8: (continued)

	(0) ^a	(1) ^b	(2) ^c	(0) ^a	(1) ^b	(2) ^c
diagnosis: <i>respiratory diseases</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	1.5%	1.1%	0.4%	98.3%	98.7%	99.5%
60	2.1%	1.1%	0.5%	97.7%	98.6%	99.4%
65	3.5%	1.4%*	0.7%	96.3%	98.4%	99.2%
70	6.4%	1.7%*	1.1%	93.4%	98.1%*	98.8%
75	12.6%	2.2%*	1.9%	87.2%	97.6%*	98.0%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.6%	0.2%	0.1%	99.2%	99.6%	99.8%
60	1.2%	0.3%	0.2%	98.6%	99.5%	99.7%
65	2.6%	0.5%*	0.4%	97.2%	99.3%	99.5%
70	5.6%	0.8%*	0.8%	94.2%	99.0%*	99.1%
75	12.0%	1.4%*	1.6%	87.8%	98.5%*	98.3%
diagnosis: <i>digestive diseases</i>						
age		$P_{ID}(t)$			$P_{IH}(t)$	
55	0.8%	0.5%	0.4%	99.1%	99.4%	99.5%
60	0.9%	0.6%	0.4%	99.0%	99.3%	99.5%
65	1.2%	0.8%	0.6%	98.6%	99.1%	99.4%
70	1.9%	1.1%	0.8%*	97.9%	98.8%	99.1%
75	3.5%	1.6%	1.3%*	96.4%	98.3%	98.6%
age		$P_{HD}(t)$			$P_{HH}(t)$	
55	0.2%	0.1%	0.1%	99.7%	99.8%	99.8%
60	0.3%	0.2%	0.1%	99.6%	99.7%	99.8%
65	0.6%	0.4%	0.3%	99.3%	99.5%	99.7%
70	1.4%	0.7%	0.5%	98.5%	99.2%	99.4%
75	2.9%	1.3%*	1.0%	97.0%	98.7%	98.9%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, secondary education.

^c Transition probability for $E = 2$, higher education.

* $p < 0.05$ of difference of adjacent education levels.

Table C.9: Transition probability within one year by education and diagnosis, model with piecewise constant age dependence from hospitalized

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	Stratified model: reference individual							
55	0.3%	0.2%	99.5%	99.7%	0.2%	0.1%	99.7%	99.8%
60	0.5%	0.3%	99.5%	99.7%	0.3%	0.2%	99.7%	99.8%
65	0.7%	0.4%	99.2%	99.6%	0.5%	0.3%	99.4%	99.7%
70	1.1%	0.5%*	98.8%	99.4%	1.0%	0.4%*	98.9%	99.5%
75	2.0%	0.7%*	97.9%	99.2%*	1.9%	0.6%*	98.1%	99.3%*
age	Structural model: reference individual							
55	0.2%	0.2%	99.7%	99.8%	0.1%	0.1%	99.9%	99.9%
60	0.3%	0.2%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
65	0.5%	0.4%	99.4%	99.6%	0.4%	0.2%	99.6%	99.7%
70	1.0%	0.6%	99.0%	99.3%	0.8%	0.5%	99.1%	99.4%
75	1.9%	1.0%	98.0%	98.9%	1.8%	0.9%	98.2%	99.0%
age	Structural model diagnosis: <i>neoplasm</i>							
55	6.1%	5.9%	93.5%	93.7%	1.7%	1.7%	97.8%	97.8%
60	6.5%	6.3%	93.3%	93.3%	2.1%	2.2%	97.6%	97.4%
65	8.4%	7.7%	91.3%	91.8%	4.2%	3.6%	95.5%	95.8%
70	12.0%	9.8%	87.7%	89.7%	8.0%	5.9%	91.7%	93.6%
75	19.5%	13.8%	80.2%	85.7%	16.0%	10.0%	83.7%	89.4%
age	Structural model diagnosis: <i>circulatory diseases</i>							
55	1.3%	0.7%	98.5%	99.0%	0.2%	0.2%	99.6%	99.5%
60	1.4%	0.8%	98.5%	98.9%	0.3%	0.4%	99.6%	99.4%
65	1.7%	1.2%	98.1%	98.5%	0.7%	0.8%	99.2%	98.9%
70	2.4%	1.8%	97.5%	97.9%	1.3%	1.4%	98.5%	98.3%
75	3.8%	3.0%	96.0%	96.7%	2.8%	2.6%	97.1%	97.0%
age	Structural model diagnosis: <i>respiratory diseases</i>							
55	1.6%	1.1%	98.1%	98.8%	0.6%	0.2%	99.1%	99.7%
60	2.2%	1.2%	97.7%	98.7%	1.2%	0.3%	98.6%	99.6%
65	3.5%	1.4%*	96.2%	98.4%	2.6%	0.5%	97.1%	99.3%
70	6.5%	1.8%*	93.3%	98.1%*	5.7%	0.9%*	94.1%	98.9%*
75	12.7%	2.5%*	87.1%	97.3%*	12.1%	1.7%*	87.7%	98.1%*
age	Structural model diagnosis: <i>digestive diseases</i>							
55	0.8%	0.7%	99.0%	99.2%	0.2%	0.1%	99.7%	99.8%
60	0.9%	0.8%	99.0%	99.1%	0.3%	0.2%	99.6%	99.7%
65	1.3%	1.0%	98.6%	98.9%	0.6%	0.3%	99.2%	99.5%
70	2.0%	1.2%	97.9%	98.7%	1.4%	0.6%	98.5%	99.3%
75	3.5%	1.8%	96.4%	98.1%	2.9%	1.2%	97.0%	98.7%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

* $p < 0.05$ of difference.

Table C.10: Transition probability within one year by education and diagnosis, model with two IQ-tests

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	Structural model: reference individual							
55	0.2%	0.2%	99.7%	99.8%	0.1%	0.1%	99.9%	99.9%
60	0.3%	0.2%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
65	0.5%	0.4%	99.5%	99.6%	0.3%	0.2%	99.6%	99.7%
70	0.9%	0.6%	99.1%	99.4%	0.8%	0.5%	99.2%	99.5%
75	1.8%	1.0%	98.2%	98.9%	1.6%	0.9%	98.3%	99.0%
age	Structural model diagnosis: <i>neoplasm</i>							
55	4.0%	5.6%*	95.9%	93.9%*	0.9%	1.6%	99.0%	97.9%
60	4.7%	6.1%	95.2%	93.4%	1.7%	2.1%	98.2%	97.4%
65	6.4%	7.0%	93.5%	92.5%	3.4%	3.0%	96.5%	96.5%
70	9.9%	8.7%	90.0%	90.9%	7.1%	4.8%	92.8%	94.7%
75	17.1%	11.9%	82.8%	87.6%	14.6%	8.2%*	85.3%	91.3%
age	Structural model diagnosis: <i>circulatory diseases</i>							
55	1.0%	0.6%	99.0%	99.1%	0.2%	0.2%	99.8%	99.6%
60	1.1%	0.8%	98.8%	99.0%	0.3%	0.3%	99.7%	99.4%
65	1.4%	1.0%	98.5%	98.8%	0.6%	0.6%	99.4%	99.2%
70	2.1%	1.5%	97.9%	98.3%	1.3%	1.0%	98.7%	98.7%
75	3.5%	2.4%	96.5%	97.4%	2.7%	2.0%	97.3%	97.8%
age	Structural model diagnosis: <i>respiratory diseases</i>							
55	1.0%	1.0%	98.9%	98.8%	0.6%	0.2%	99.4%	99.7%
60	1.7%	1.1%	98.3%	98.8%	1.3%	0.2%*	98.7%	99.6%
65	3.2%	1.2%*	96.8%	98.6%	2.8%	0.4%*	97.2%	99.5%*
70	6.3%	1.5%*	93.7%	98.4%*	5.9%	0.7%*	94.0%	99.2%*
75	12.8%	2.1%*	87.2%	97.8%*	12.6%	1.2%*	87.4%	98.6%*
age	Structural model diagnosis: <i>digestive diseases</i>							
55	0.8%	0.7%	99.2%	99.2%	0.1%	0.1%	99.8%	99.8%
60	0.9%	0.8%	99.0%	99.1%	0.3%	0.2%	99.7%	99.7%
65	1.3%	0.9%	98.7%	99.0%	0.6%	0.3%	99.3%	99.6%
70	1.9%	1.1%	98.0%	98.8%	1.3%	0.5%	98.7%	99.4%
75	3.4%	1.5%*	96.5%	98.4%	2.8%	0.9%*	97.1%	99.0%*

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

* $p < 0.05$ of difference.

Table C.11: Transition probability within one year by education and diagnosis, model with teacher advice

	$P_{ID}(t)$		$P_{IH}(t)$		$P_{HD}(t)$		$P_{HH}(t)$	
	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b	(0) ^a	(1) ^b
age	Stratified model: reference individual							
55	0.3%	0.2%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
60	0.4%	0.3%	99.5%	99.7%	0.3%	0.2%	99.6%	99.8%
65	0.7%	0.3%	99.3%	99.6%	0.5%	0.3%	99.4%	99.7%
70	1.1%	0.5%*	98.8%	99.5%	1.0%	0.4%*	99.0%	99.5%*
75	1.9%	0.7%*	98.0%	99.3%*	1.8%	0.6%*	98.1%	99.3%*
age	Structural model: reference individual							
55	0.2%	0.2%	99.7%	99.8%	0.0%	0.0%	99.9%	99.9%
60	0.3%	0.2%	99.6%	99.7%	0.2%	0.1%	99.8%	99.8%
65	0.5%	0.3%	99.5%	99.6%	0.3%	0.2%	99.6%	99.7%
70	0.9%	0.6%	99.1%	99.4%	0.7%	0.5%	99.2%	99.5%
75	1.8%	1.0%	98.2%	98.9%	1.6%	0.9%	98.3%	99.0%
age	Structural model diagnosis: <i>neoplasm</i>							
55	4.9%	5.1%	94.9%	94.5%	1.1%	1.5%	98.5%	98.0%
60	5.6%	5.6%	94.2%	94.0%	1.9%	2.1%	97.8%	97.5%
65	7.0%	6.6%	92.7%	92.9%	3.5%	3.2%	96.3%	96.4%
70	10.3%	8.7%	89.5%	90.9%	6.9%	5.3%	92.8%	94.2%
75	17.2%	12.7%	82.6%	86.9%	14.2%	9.5%	85.6%	90.0%
age	Structural model diagnosis: <i>circulatory diseases</i>							
55	1.2%	0.6%	98.7%	99.1%	0.2%	0.2%	99.7%	99.5%
60	1.3%	0.8%	98.6%	98.9%	0.3%	0.4%	99.6%	99.3%
65	1.6%	1.1%	98.3%	98.6%	0.6%	0.7%	99.3%	99.0%
70	2.2%	1.7%	97.7%	98.0%	1.2%	1.3%	98.7%	98.4%
75	3.5%	3.0%	96.4%	96.8%	2.5%	2.6%	97.4%	97.1%
age	Structural model diagnosis: <i>respiratory diseases</i>							
55	1.4%	1.0%	98.5%	98.8%	0.6%	0.2%	99.3%	99.6%
60	2.0%	1.1%	97.9%	98.7%	1.2%	0.4%	98.7%	99.5%
65	3.3%	1.4%*	96.6%	98.5%	2.6%	0.6%*	97.3%	99.2%
70	6.2%	1.8%*	93.7%	98.0%*	5.5%	1.1%*	94.3%	98.7%*
75	12.4%	2.8%*	87.5%	97.0%*	11.8%	2.0%*	88.0%	97.8%*
age	Structural model diagnosis: <i>digestive diseases</i>							
55	0.7%	0.6%	99.2%	99.3%	0.1%	0.1%	99.8%	99.8%
60	0.8%	0.7%	99.1%	99.2%	0.3%	0.2%	99.6%	99.7%
65	1.1%	0.8%	98.8%	99.1%	0.5%	0.3%	99.4%	99.6%
70	1.7%	1.1%	98.2%	98.8%	1.1%	0.6%	98.8%	99.3%
75	3.0%	1.6%	96.9%	98.3%	2.5%	1.1%	97.4%	98.8%

^a Transition probability for $E = 0$, primary education.

^b Transition probability for $E = 1$, above primary education.

* $p < 0.05$ of difference.