

Initiating Events for Treatment Episodes of Children and Dependents of Insured Workers

Allen C. Goodman PhD

Janet R. Hankin PhD

David E. Kalist MA

Stephen J. Spurr PhD

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Background: Health care analysts have sought to operationalize the concept of health care episodes. This study investigates *treatment episodes*, which are defined by contact with health care providers, in either inpatient or outpatient settings.

Objectives: This methodological study seeks to characterize episodes by the treatment event that initiates them, with particular focus on mental health/substance abuse treatment episodes. The particular focus is to contrast the experiences of children and dependents of insured workers with the workers themselves.

Subjects: The study population was selected from a large health insurance claims database of 36 self-insured employers, for all treatment events starting January 1, 1989, and ending December 31, 1991.

This provides a database of over 150,000 episodes, for over 34,000 individuals who had either an alcohol or a drug abuse diagnosis.

Research Design: We categorize episodes by inpatient or outpatient location and by broad treatment type (alcohol, drug, psychiatric, surgery, or medical – a category for all other types of care).

We provide summary analyses and descriptive profiles of the 10 episode types.

Table 1.1 Inpatient Episode Summaries - 18 and Older

	<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>
N	6562	3883	1130	576	1048	13199
Percent	49.72	29.42	8.56	4.36	7.94	100.00
Start (1 Jan 89 = 0)	498.87	456.79	511.42	511.51	511.68	489.13
Duration	36.90	34.48	55.48	38.52	32.03	37.46
Inpatient Days	20.88	21.77	24.64	11.43	9.73	20.17
Visits	2.05	1.79	4.29	3.55	2.75	2.29
Inpatient Costs	8190.49	9573.89	13723.87	13946.20	7585.91	9274.37
Outpatient Costs	448.76	417.08	865.76	1036.56	700.31	520.76
Total Costs	8639.25	9990.97	14589.63	14982.76	8286.22	9795.13

Table 1.2 Inpatient Episode Summaries - 17 and younger

	<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>
N	622	510	432	41	113	1718
Percent	36.20	29.69	25.15	2.39	6.58	100.00
Start (1 Jan 89 = 0)	464.11	401.21	459.66	497.56	456.61	444.62
Duration	39.76	44.78	64.46	39.24	45.11	47.80
Inpatient Days	29.10	33.91	44.10	8.41	14.02	32.81
Visits	1.47	1.89	4.36	3.46	4.62	2.57
Inpatient Costs	11140.53	15709.75	25505.00	8813.22	9504.19	15945.78
Outpatient Costs	335.97	571.61	1199.55	751.61	1253.78	693.36
Total Costs	11476.50	16281.36	26704.55	9564.83	10757.97	16639.14

Table 2.1 Outpatient Episode Summaries - 18 and over

	<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>
N	13451	6312	13843	11570	78256	123432
Percentage	10.90	5.11	11.22	9.37	63.40	100.00
Start (1 Jan 1989 = 0)	523.50	507.17	538.73	529.59	526.98	527.15
Duration (in days)	36.79	38.68	53.89	25.32	28.33	32.37
Inpatient Days	1.97	2.80	3.16	1.67	1.80	2.01
Visits	4.42	4.39	6.07	3.45	3.77	4.10
Inpatient Costs	935.94	1340.95	1799.83	1291.22	1337.23	1341.26
Outpatient Costs	849.52	973.89	885.85	879.60	724.89	783.76
Total Costs	1785.46	2314.84	2685.68	2170.82	2062.12	2125.02

Table 2.2 Outpatient Episode Summaries - 17 and younger

	<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>
N	1485	1273	2668	1607	11333	18366
Percentage	8.09	6.93	14.53	8.75	61.71	100.00
Start (1 Jan 1989 = 0)	502.03	459.71	470.73	441.67	464.41	466.06
Duration (in days)	27.73	28.66	49.90	20.18	21.55	26.54
Inpatient Days	3.31	4.41	5.86	1.84	1.91	2.76
Visits	3.27	3.53	5.53	2.88	2.78	3.28
Inpatient Costs	1468.68	2178.35	3207.20	1142.97	1034.53	1474.02
Outpatient Costs	784.02	774.04	901.86	810.05	422.38	579.57
Total Costs	2252.70	2952.39	4109.06	1953.02	1456.91	2053.59

Inpatient Episodes - 18 and over													
	Dependents							Self					
	<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>		<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>
N	1805	1322	452	187	332	4098		4757	2561	678	389	716	9101
Percent	13.68	10.02	3.42	1.42	2.52	31.05		36.04	19.40	5.14	2.95	5.42	68.95
Start (1 Jan 89 = 0)	504.82	456.15	494.16	495.02	519.16	488.66		496.61	457.12	522.92	519.44	508.21	489.34
Duration	33.25	32.03	51.52	35.06	31.79	34.84		38.29	35.75	58.13	40.17	32.14	38.65
Inpatient Days	20.22	21.54	25.30	10.65	10.91	20.02		21.13	21.90	24.20	11.80	9.18	20.24
Visits	1.73	1.60	3.93	3.13	2.80	2.08		2.17	1.89	4.53	3.75	2.73	2.38
Inpatient Costs	8581.76	10034.72	14898.18	12058.85	8971.58	9937.42		8042.03	9336.01	12940.99	14853.48	6943.39	8975.82
Outpatient Costs	379.83	355.99	907.43	1019.92	818.77	495.10		474.91	448.62	837.99	1044.55	645.38	532.32
Total Costs	8961.59	10390.71	15805.61	13078.77	9790.35	10432.52		8516.94	9784.63	13778.98	15898.03	7588.77	9508.14

Outpatient Episodes - 18 and over														
	Dependents							Self						
	<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>		<u>Alcohol</u>	<u>Drug</u>	<u>Psych</u>	<u>Surgery</u>	<u>Medical</u>	<u>Total</u>	
N	3713	2188	4936	3688	25760	40285		9738	4124	8907	7882	52496	83147	
Percentage	3.01	1.77	4.00	2.99	20.87	32.64		7.89	3.34	7.22	6.39	42.53	67.36	
Start data (1 Jan 1989 = 0)	531.43	497.69	537.08	538.52	537.17	534.61		520.47	512.20	539.64	525.41	521.98	523.53	
Duration (in days)	31.87	32.56	52.83	25.94	29.22	32.24		38.67	41.92	54.48	25.02	27.89	32.43	
Inpatient Days	1.77	2.61	3.28	1.42	1.81	1.99		2.05	2.91	3.09	1.78	1.79	2.02	
Visits	3.94	3.80	6.04	3.54	3.93	4.15		4.60	4.71	6.09	3.41	3.69	4.08	
Inpatient Costs	821.19	1309.36	1893.04	1151.79	1389.43	1372.66		979.70	1357.71	1748.18	1356.46	1311.61	1326.04	
Outpatient Costs	772.52	862.99	905.50	894.16	755.36	793.89		878.89	1032.73	874.96	872.79	709.93	778.85	
Total Costs	1593.71	2172.35	2798.54	2045.95	2144.79	2166.55		1858.59	2390.44	2623.14	2229.25	2021.54	2104.89	

Table 3 - Inpatient Drug Episode Profiles - 17 and younger dep (n = 508)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Inpatient					Outpatient					
	<u>alcohol</u>	<u>drug</u>	<u>psych</u>	<u>surgery</u>	<u>medical</u>	<u>alcohol</u>	<u>drug</u>	<u>psych</u>	<u>surgery</u>	<u>medical</u>	<u>Total</u>
<u>Inpatient Care</u>											
1. Admissions	0.03	1.08	0.03	0.01	0.01						
2. Days/Adm.	21.67	29.81	27.82	2.67	4.67						
3. Total days	0.65	32.33	0.93	0.02	0.03						33.96
4. % tot days	1.91	95.22	2.74	0.05	0.08						
<u>Outpatient Care</u>											
5. Probability of visit						0.08	0.21	0.13	0.06	0.26	
6. Visits, if made						2.49	3.20	3.19	1.60	2.05	
7. Total visits						0.19	0.69	0.40	0.09	0.53	1.90
8. % total						10.00	36.15	21.13	4.97	27.76	
<u>Totals</u>											
9. Costs(\$)	143.84	15000.63	513.31	27.93	43.01	37.09	337.84	103.15	32.52	63.27	16302.58
10. % total	0.88	92.01	3.15	0.17	0.26	0.23	2.07	0.63	0.20	0.39	100.00

Table 3 - Inpatient Drug Episode Profiles - 18 and older dep (n = 1322)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Inpatient					Outpatient					
	<u>alcohol</u>	<u>drug</u>	<u>psych</u>	<u>surgery</u>	<u>medical</u>	<u>alcohol</u>	<u>drug</u>	<u>psych</u>	<u>surgery</u>	<u>medical</u>	<u>Total</u>
<u>Inpatient Care</u>											
1. Admissions	0.01	1.07	0.02	0.01	0.01						
2. Days/Adm.	15.00	19.41	30.59	6.29	3.47						
3. Total days	0.15	20.80	0.51	0.03	0.04						21.54
4. % tot days	0.70	96.60	2.36	0.15	0.18						
<u>Outpatient Care</u>											
5. Probability of visit						0.05	0.20	0.06	0.05	0.21	
6. Visits, if made						4.39	3.02	3.41	1.49	2.37	
7. Total visits						0.22	0.62	0.19	0.08	0.49	1.60
8. % total						1.50	4.20	1.32	0.52	3.35	
<u>Totals</u>											
9. Costs(\$)	37.25	9615.52	299.62	34.33	47.99	34.74	186.87	36.52	24.44	73.42	10390.71
10. % total	0.36	92.54	2.88	0.33	0.46	0.33	1.80	0.35	0.24	0.71	100.00

Table 3 - Outpatient Drug Episode Profiles - 17 and younger dep (n = 1269)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Inpatient					Outpatient					
	alcohol	drug	psych	surgery	medical	alcohol	drug	psych	surgery	medical	Total
Inpatient Care											
1. Admissions	0.03	0.08	0.04	0.00	0.00						
2. Days/Adm.	23.67	26.56	43.54	3.00	4.00						
3. Total days	0.71	2.05	1.65	0.00	0.01						4.42
4. % tot days	16.06	46.41	37.26	0.05	0.21						
Outpatient Care											
5. Probability of visit						0.05	1.00	0.10	0.04	0.23	
6. Visits, if made						2.62	2.42	3.83	1.53	2.47	
7. Total visits						0.12	2.42	0.36	0.07	0.57	3.54
8. % total						3.40	68.59	10.34	1.94	16.17	
Totals											
9. Costs(\$)	281.29	1037.71	853.59	5.56	7.08	31.11	576.55	65.80	47.78	54.67	2961.13
10. % total	9.50	35.04	28.83	0.19	0.24	1.05	19.47	2.22	1.61	1.85	100.00

Table 3 - Outpatient Drug Episode Profiles - 18 and older dep (n = 2188)

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
	Inpatient					Outpatient					
	alcohol	drug	psych	surgery	medical	alcohol	drug	psych	surgery	medical	Total
Inpatient Care											
1. Admissions	0.03	0.09	0.02	0.01	0.02						
2. Days/Adm.	15.33	17.58	23.38	7.57	5.68						
3. Total days	0.46	1.54	0.45	0.07	0.09						2.61
4. % tot days	17.61	59.06	17.18	2.78	3.38						
Outpatient Care											
5. Probability of visit						0.04	1.00	0.08	0.08	0.26	
6. Visits, if made						2.48	2.47	3.87	1.62	3.13	
7. Total visits						0.1	2.47	0.30	0.12	0.83	3.82
8. % total						2.63	64.93	7.94	3.22	21.76	
Totals											
9. Costs(\$)	190.42	665.61	294.42	82.86	76.04	19.70	600.30	62.30	64.12	116.57	2172.35
10. % total	8.77	30.64	13.55	3.81	3.50	0.91	27.63	2.87	2.95	5.37	100.00

Discussion

- For inpatient episodes **18+ self** and **18+ dependent** seem to be fairly similar in utilization, although **18+ dependents** are slightly more expensive in all but surgery.
- For outpatient episodes, **18+ self** and **18+ dependents** are almost identical.
- BIG differences between **17-younger** and **18-over dependents**.
- For inpatient drug episodes, **17-younger** had 12 more days, and about \$6,000 more expenditures per episode.
- For outpatient episodes, **17-younger** had almost 2 more days, and approximately 36% higher expenditures.

Inpatient Episodes

	Total Alcohol	18 + Alcohol	17 - Alcohol	t -ratio	Total Drug	18 + Drug	17 - Drug	t-ratio
N	7184	6562	622		4393	3883	510	
Percent	48.16	49.72	36.20		29.45	29.42	29.69	
Start	495.86	498.87	464.11	-2.64 ***	450.34	456.79	401.21	-3.90 ***
Duration	37.15	36.90	39.76	1.65 *	35.68	34.48	44.78	5.40 ***
Inpatient Days	21.59	20.88	29.10	7.49 ***	23.18	21.77	33.91	10.34 ***
Visits	2.00	2.05	1.47	-4.08 ***	1.81	1.79	1.89	0.50
Inpatient Costs	8445.91	8190.49	11140.53	6.90 ***	10286.23	9573.89	15709.75	8.34 ***
Outpatient Costs	438.99	448.76	335.97	-3.06 ***	435.02	417.08	571.61	1.91 *
Total Costs	8884.90	8639.25	11476.50	6.54 ***	10721.25	9990.97	16281.36	8.38 ***

Outpatient Episodes

	Total Alcohol	18 + Alcohol	17 - Alcohol	t -ratio	Total Drug	18 + Drug	17 - Drug	t-ratio
N	14936	13451	1485		7585	6312	1273	
Percent	10.53	10.90	8.09		5.35	5.11	6.93	
Start	521.36	523.50	502.03	-2.48 ***	499.21	507.17	459.71	-4.84 ***
Duration	35.89	36.79	27.73	-6.87 ***	37.00	38.68	28.66	-6.15 ***
Inpatient Days	2.11	1.97	3.31	3.79 ***	3.07	2.80	4.41	3.03 ***
Visits	4.31	4.42	3.27	-7.45 ***	4.25	4.39	3.53	-4.54 ***
Inpatient Costs	988.91	935.94	1468.68	3.04 ***	1481.49	1340.95	2178.35	3.15 ***
Outpatient Costs	843.01	849.52	784.02	-1.33	940.35	973.89	774.04	-2.98 ***
Total Costs	1831.91	1785.46	2252.70	2.50 ***	2421.84	2314.84	2952.39	2.20 **

Inpatient Episodes - Dependents

	Total Alcohol	18 + Alcohol	17 - Alcohol	t-ratio	Total Drug	18 + Drug	17 - Drug	t-ratio
N	2423	1805	618		1830	1322	508	
Percent	41.70	44.05	36.10		31.50	32.26	29.67	
Start	493.81	504.82	461.66	-2.96 ***	440.40	456.15	399.41	-3.57 ***
Duration	34.93	33.25	39.84	3.43	35.59	32.03	44.87	6.14 ***
Inpatient Days	22.50	20.22	29.15	7.82 ***	24.99	21.54	33.96	9.99 ***
Visits	1.66	1.73	1.48	-1.43	1.68	1.60	1.90	1.36
Inpatient Costs	9240.48	8581.76	11164.41	5.66 ***	11615.35	10034.72	15728.72	7.38 ***
Outpatient Costs	368.41	379.83	335.05	-1.06	416.47	355.99	573.86	2.61 ***
Total Costs	9608.89	8961.59	11499.46	5.47 ***	12031.82	10390.71	16302.58	7.51 ***

Outpatient Episodes - Dependents

	Total Alcohol	18 + Alcohol	17 - Alcohol	t-ratio	Total Drug	18 + Drug	17 - Drug	t-ratio
N	5193	3713	1480		3457	2188	1269	
Percent	8.86	9.22	8.07		5.90	5.43	6.92	
Start	522.96	531.43	501.70	-3.04 ***	483.79	497.69	459.82	-3.36 ***
Duration	30.66	31.87	27.63	-2.68 ***	31.14	32.56	28.68	-2.03 **
Inpatient Days	2.21	1.77	3.32	4.25 ***	3.28	2.61	4.42	3.24 ***
Visits	3.75	3.94	3.27	-3.42 ***	3.70	3.80	3.53	-1.26
Inpatient Costs	1007.14	821.19	1473.64	3.61 ***	1630.87	1309.36	2185.22	3.08 ***
Outpatient Costs	775.79	772.52	783.99	0.21	831.02	862.99	775.91	-1.32
Total Costs	1782.93	1593.71	2257.63	3.42 ***	2461.90	2172.35	2961.13	2.56 ***