

TITLE CONFUSION VERSUS ISSUE FREQUENCY IN A MAIL SURVEY

Thomas E. Healey, J.D. Power and Associates

The J.D. Power Car Media Report is an annual survey primarily intended to ascertain readership of national magazines by principal drivers of new cars purchased or leased for personal use. This mailed survey uses logos to facilitate recognition of the 114 magazines measured.

Up until the time of McGlathery's paper on title confusion in a personal interview study (this paper dealt with including or not including a title similar to one already in a Study), our policy on grouping titles was ambivalent. Grouping by approximate issue frequency was generally our primary rule but it was unevenly applied; most notably, *National Geographic Traveler* a bimonthly, was always set between *National Geographic* magazine and *Condé Nast Traveler* because of serious concern about title confusions.

Table 1 - Logos



Publications issued MONTHLY	Q. 6a May have read or looked into in last 6 months		Q. 6b. If YES, mark how many of the past 4 issues you have read or looked into				
	No	Yes	None	1	2	3	4
NATIONAL GEOGRAPHIC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Table 2 - Issue Category

Category	Actual Number of Issues/Year
Weekly	50-52
Bi-Weekly	24-26
Monthly	7*, 9-17
Bi-Monthly	6-8

* Seasonal titles (such as those pertaining to skiing) are published monthly, but with hiatuses.

The issue addressed here is whether titles with a meaningful degree of similarity should be grouped together even if this violates issue frequency groupings to minimize overstatement of audience due to title confusion.

There have been four titles in our survey that have the word "health" in their titles or are primarily about the subject of health. They are:

- American Health
- Health
- Men's Health
- Prevention

The magazine "Health" underwent changes in ownership, issue frequency and logos that gave rise to this issue. *American Health* and *Prevention* were relatively stable over this time while *Men's Health*, a new title, showed strong growth in circulation.

Family Media, a now-defunct publishing company, had a monthly magazine called *Health* up until our 1992 Report fieldwork. At that time, Time, Inc. bought the rights to the old "Health" magazine and replaced their own title "*In Health*" with a reworked magazine called "*Health*". At that time the magazine was assigned a 7 times annual frequency versus the 12 issues of the Family Media "*Health*". *In-Health* was never measured in our Reports.

Below is the history of average issue readership performance of the concerned titles. Note that:

- A) There was no Report titled "1993." We re-labeled the Reports to represent the year of publication rather than the year of our fieldwork.
- B) We use percent coverage of new car principal drivers to make comparisons across years since our universes can fluctuate substantially as the volume of new car sales varies. The Study is meant to be one of vehicle segments but this comparison is based on total personal-use new cars.

Table 3 - Title Placement and Average Issue Audience %

'95 Publication	'87	'88	'89	'90	'91	'92	'94	'95
12X Prevention	M 6.7	M 6.9	M 7.1	M 6.8	M 7.0	M 7.3	M 7.6	M 8.2
10X American Health	M 3.1	M 2.7	M 3.2	M 2.8	M 2.7	M 3.1	M 3.1	M 2.3
7X Health		M 2.9	M 3.0	M 2.6	M 2.5	B 3.0	B 3.0	M 2.2
10X Men's Health						M 1.9	B 2.7	M 3.9
"Health" Logo Ownership		Family Media				Time Inc. Ventures		
"Health" Logo Design		Thin, Upper Case		Lower Case		Block w/shadow		

Source: 1987-1995 Power Media Reports

The shading above indicates juxtaposition of titles in an unbroken vertical shading. Notice we were inconsistent in our juxtaposing of titles but that, generally speaking, when *Health* and *American Health* were apart ('88, '89, '92, '94) they scored higher than when they were together.

Table 4 - Historic Levels, Apart and Together

Title	Apart					Together			
	'88	'89	'92	'94	Avg.	'90	'91	'95	Avg.
American Health	2.7	3.2	3.1	3.1	3.0	2.8	2.7	2.3	2.6
Health	2.9	3.0	3.0	3.0	3.0	2.6	2.5	2.2	2.4

J.D. Power and Associates reinstated the monthly health grouping for the '95 Report in recognition of the importance of title confusion as much more of a factor in causing unrealistic ratings.

The unusually low levels of audience for 1995 gave rise to two hypotheses:

- A) The level of audience for *Health* was substantially lower due to its being taken out of the bimonthly section and placed in with the monthlies. Thus our question on "how many of the past four issues" was framed in a potentially misleading context of 12 issues per year. For instance, a respondent reading all four of the last four issues of a bimonthly (4 issues over 8 months) might report having read only two of the last four if they were expecting four in the past four months and had read only two.
- B) The differences are primarily due to forcing respondents to choose one or another or both titles by presenting the logos together. Those less familiar with the titles, knowing they had read a title about health might, seeing them separately and separated by other titles might check off both when only one of them was read.

The Design

The survey mails in two waves each year, Wave I, in early Spring, and Wave II, in early September. We designed a test using the sixteen different versions of the questionnaire to compare the effects of grouping by frequency and grouping to minimize title confusion. Each version in a Wave would net over 900 respondents.

For Wave II of the 1996 Report's fieldwork (late 1995) we designated the following:

- A) 8 versions had all four health titles together in the monthly section. This was the status quo and control for the test.

- B) 4 versions had *Health* in the bimonthly section well separated from the other health titles which were together in the monthly section.
- C) 4 versions had *Health* in the monthly section but well separated from the other health titles which were grouped together in the monthly section.

If issue frequency alone was the key agent here, *Health* should have scored best in B) and equally poorly in A) and C).

If title confusion alone was the reason for rating differential, *Health*'s performance in the "health" monthly grouping A) would be below the B) and C) versions which would be fairly similar to each other.

The test was repeated for Wave I of our 1997 fieldwork.

Table 5 - First Test - Wave II 1996

Version	Health Location	<i>Health</i>	<i>American Health</i>
8	health monthlies	2.3	2.4
4	bimonthly, alone	4.1* (2.9)	2.9
4	monthlies, alone	3.3	3.1

*one version, placing *Health* far forward (5th of 114 titles) had an "outlier" value of 7.7%; the 2.9% excludes this version and is the average of the other three versions.

Clearly, *Health* and *American Health* with both in the monthly section, (apart and then, together) did substantially better apart than when next to each other, 3.2 versus 2.4, or 36% higher.

American Health scored closer to the same (2.9 versus 3.1) in both versions where it was apart from *Health*.

Health clearly did better when alone but whether one excludes the outlier or not would determine whether one could conclude:

- 1) the bimonthly (alone) positioning was actually inferior to the monthly (alone) position, or
- 2) the bimonthly positioning was important.

Note here that these versions were not randomly selected; the versions where the titles were to be separated, were chosen so as to maximize that separation. Also, our 16 versions do not exhaust the many possible permutations of title placements. While our early research on title rotations showed they were essential because, averagely, scores tended to increase the further back a title was positioned, a far front position might behave differently.

To try to clear this up, we decided to redo the experiment using the same versions for the same positioning of *Health* as before. The versions were modified to reflect only the changes due to inserting or deleting titles from year-to-year.

Table 6 - Second Test - Wave I 1997

Version	Health Location	<i>Health</i>	<i>American Health</i>
8	health monthlies	2.2	2.6
4	bimonthly, alone	3.6* (2.6)	2.8
4	monthlies, alone	3.4	2.1

In this iteration, whether you count or discount the same outlier, Version 6, which scored 6.7% for *Health*, there is no case for the bimonthly positionings suiting *Health* better than the monthly-alone position and the health-monthly scores.

The *American Health* score in the monthly-alone position (2.1%) is counter-intuitive and we are unable to explain this result.

The overall variability of scores for both test iterations was unanticipated and adds a dimension for future tests. We suspect now that even though the "deeper-in, the-better" theory works on average, this is not a smoothly increasing function. The attached exhibits show exact positions and separation (interposed magazine logos) for each version and number of pages of difference.

Conclusions:

General

1. Based on the tests and in light of the historic patterns in this category, where the potential for title confusion exists on the order of that between *Health* and *American Health*, juxtaposition is important to minimize title confusion.
2. We could not conclude, in this test, that frequency groupings had a meaningful effect on the audience scores.

Particular

It seems that in light of the tests and of the audience data from the non-test versions of the 1996 and 1997 Power Car Media Reports (all sixteen versions of the non-test wave and the eight control versions from the test wave) that the lower scores in the 1995 Reports for both *Health* and *American Health* represent a confluence of two factors:

- A) the juxtaposition of titles reduced double reporting due to true title confusion although not to a large enough degree to explain the full drop in audience reported.
- B) both titles had a bad year on top of the elimination of title confusion. The 1996 and 1997 data for both are at a higher level than in 1995 but below the peak in 1994. It is consistent with earlier levels when the titles were together.
- C) neither *Prevention* or *Men's Health* seemed to be affected by *Health's* presence or absence in the groupings.

References

McGlathery, Donald G. Does Title Confusion Affect Magazine Audience Levels?, *Journal of Advertising Research*, Jan/Feb 1993.

APPENDIX I Health Test Health Versus American Health

WAVE 2 1996												
Ver.	Pos. Diff		Pages	"Health"					"American Health"			
	H	AH		Avg. Iss. Aud.	Unwt. Reading Surveys	In-Tab Sigma*	Avg. Iss. Aud.	Unwt. Reading Surveys	In-Tab Sigma*			
Health - General MO												
1	36	54	-18	1	3.65%	63	903	0.62%	2.06%	31	903	0.47%
7	48	26	22	1	3.79%	31	922	0.63%	4.76%	58	922	0.70%
8	81	30	51	2	1.73%	34	920	0.43%	2.95%	44	920	0.56%
14	81	94	-13	1	4.02%	52	907	0.68%	2.57%	33	907	0.53%
Health - Bi-Monthly												
3	96	1	95	4	3.31%	42	926	0.59%	2.95%	73	926	0.56%
6	5	116	-111	4	7.73%	112	933	0.87%	2.22%	27	933	0.46%
11	112	17	95	3	1.90%	35	958	0.44%	3.67%	62	958	0.61%
15	99	8	91	4	3.40%	49	924	0.60%	2.76%	34	924	0.54%
* Where sigma = $\sqrt{\frac{P(1-P)}{h}}$												
				W/O V B	2.87%	126	2808	0.32%	2.91%	196	3741	0.27%
Health - Category MO												
2	87	86	1	1	2.18%	30	890	0.49%	1.93%	30	890	0.46%
4	35	34	1	1	2.48%	41	920	0.51%	3.15%	60	920	0.56%
5	82	83	-1	1	2.04%	31	923	0.47%	1.68%	22	923	0.42%
9	70	69	1	1	2.13%	30	924	0.47%	1.69%	28	924	0.42%
10	103	102	1	1	1.64%	31	923	0.42%	1.74%	35	920	0.43%
12	51	50	1	1	3.48%	41	923	0.60%	3.89%	56	923	0.64%
13	60	61	-1	1	1.70%	31	927	0.42%	1.99%	33	927	0.46%
16	41	42	-1	1	3.00%	42	893	0.57%	3.22%	34	893	0.58%
				W/O V B	2.32%	277	7320	0.18%	2.40%	298	7320	0.18%

WAVE 1 1997												
Ver.	Pos. Diff		Pages	"Health"					"American Health"			
	H	AH		Avg. Iss. Aud.	Unwt. Reading Surveys	In-Tab Sigma*	Avg. Iss. Aud.	Unwt. Reading Surveys	In-Tab Sigma*			
Health - General MO												
1	38	61	-23	1	5.47%	107	949	0.74%	2.55%	949	949	0.51%
7	52	29	23	1	1.63%	32	912	0.42%	1.62%	812	812	0.42%
8	79	56	23	1	2.75%	37	895	0.55%	3.02%	695	695	0.57%
14	73	94	-21	1	3.91%	65	985	0.62%	1.18%	985	985	0.35%
Health - Bi-Monthly												
3	97	1	96	4	3.11%	51	825	0.57%	3.02%	925	925	0.56%
6	4	116	-112	4	6.66%	126	904	0.83%	1.35%	904	904	0.38%
11	113	17	96	3	2.67%	60	940	0.53%	4.20%	940	940	0.65%
15	100	7	93	4	1.94%	42	998	0.44%	2.81%	998	998	0.53%
				W/O V B	3.56%	279	3737	0.30%	2.84%	0	3,737	0.27%
Health - Category MO												
2	88	87	1	1	1.50%	29	944	0.40%	3.02%	944	944	0.56%
4	29	28	1	1	3.56%	48	925	0.61%	4.76%	925	925	0.70%
5	88	89	-1	1	1.83%	34	903	0.45%	1.74%	903	903	0.44%
9	77	76	1	1	2.41%	44	953	0.50%	1.90%	853	853	0.44%
10	104	103	1	1	1.48%	38	978	0.39%	2.11%	878	878	0.46%
12	45	44	1	1	3.58%	54	996	0.59%	4.34%	896	896	0.65%
13	66	67	-1	1	1.32%	26	839	0.37%	1.32%	839	839	0.37%
16	34	35	-1	1	1.58%	42	936	0.41%	1.42%	836	836	0.39%
				W/O V B	2.16%	314	7575	0.17%	2.59%	0	7,575	0.18%
				Health - General MO + Bi-Monthly (Other)	3.49%				2.44%			

Scenario #1 - Bi-Monthly Wave I, 1996

Scenario #1 -- Health Bi-Monthly				Rectangle = Bi-Monthly				Circle = Health Monthly			
Version 3											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
		20	33	46	59	72	85	98	111		
		21	34	47	60	73	86	99	112		
		22	35	48	61	74	87	100	113		
		23	36	49	62	75	88	101	114		
		24	37	50	63	76	89	102	115		
		25	38	51	64	77	90	103	116		
Am Hlth	2.95	7						Health	3.31	109	
2	8							97	110		
3	9							98	111		
4	10							99	112		
5	11							100	113		
6	12							101	114		
Version 6											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
		20	33	46	59	72	85	98	111		
		21	34	47	60	73	86	99	112		
		22	35	48	61	74	87	100	113		
		23	36	49	62	75	88	101	114		
		24	37	50	63	76	89	102	115		
		25	38	51	64	77	90	103	116		
1	7							97	110		
2	8							98	111		
3	9							99	112		
4	10							100	113		
Health	7.73	11						101	114		
6	12							102	115		
								Am Hlth	2.22		
Version 11											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
		20	33	46	59	72	85	98	111		
		21	34	47	60	73	86	99	112		
		22	35	48	61	74	87	100	113		
		23	36	49	62	75	88	101	114		
		24	37	50	63	76	89	102	115		
		25	38	51	64	77	90	103	116		
1	7							97	110		
2	8							98	111		
3	9							99	112		
4	10							100	113		
5	11							101	114		
6	12							102	115		
								Health	1.90		
Version 15											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
		20	33	46	59	72	85	98	111		
		21	34	47	60	73	86	99	112		
		22	35	48	61	74	87	100	113		
		23	36	49	62	75	88	101	114		
		24	37	50	63	76	89	102	115		
		25	38	51	64	77	90	103	116		
1	7							97	110		
2	8							98	111		
3	9							99	112		
4	10							100	113		
5	11							101	114		
6	12							102	115		
								Health	3.40		

Aggregate AIA

Health = 4.05

American Health = 2.91

Scenario #2 - General Monthly Wave II, 1996

Scenario #2 -- General Monthly				Rectangle = General Monthly				Circle = Health Monthly			
Version 1											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	113		
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
			Health 3.65		Am Hlth 2.06						
Version 7											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	113		
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
			Am Hlth 4.76		Health 3.79						
Version 8											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	113		
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
			Am Hlth 2.95		Health 1.73						
Version 14											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	113		
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
					Health 4.07			Am Hlth 2.57			
Aggregate AIA											
Health = 3.32				American Health = 3.05							

Scenario #3 - Health Monthly Wave II, 1996

Scenario #3 -- Health Monthly				Circle = Health Monthly					
Version 2									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
							Am Hlth 1.93		
							Health 2.18		
Version 4									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
			Am Hlth 3.15						
			Health 2.48						
Version 5									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
							Health 2.04		
							Am Hlth 1.68		
Version 9									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
							Am Hlth 1.69		
							Health 2.13		

Scenario #3 Continued - Health Monthly Wave II, 1996

Scenario #3 -- Health Monthly				Circle = Health Monthly					
Version 10									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	Am Hlth	1.74 115
6	12	25	38	51	64	77	90	Health	1.64 116
Version 12									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	Am Hlth	3.89 63	76	89	102	115
6	12	25	38	Health	3.49 64	77	90	103	116
Version 13									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	Health	1.70 73	86	99	112
3	9	22	35	Am Hlth	1.99 74	87	89	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
Version 16									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	Health	3.00 54	67	80	93	106
		16	29	Am Hlth	3.22 55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
Aggregate AIA									
				Health = 2.32		American Health = 2.40			

Scenario #1 - Health Bi-Monthly Wave I, 1997

Scenario #1 -- Health Bi-Monthly			Rectangle = Bi-Monthly				Circle = Health Monthly				
Version 3											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	Health 3.11	110		
Am Hlth 3.02	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	113		
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
Version 6											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	113		
Health 6.66	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	Am Hlth 1.33	116	
Version 11											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		Am Hlth 4.20	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	7	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	100	Health 2.67	112	
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
Version 15											
		13	26	39	52	65	78	91	104		
		14	27	40	53	66	79	92	105		
		15	28	41	54	67	80	93	106		
		16	29	42	55	68	81	94	107		
		17	30	43	56	69	82	95	108		
		18	31	44	57	70	83	96	109		
		19	32	45	58	71	84	97	110		
1	Am Hlth 2.81	20	33	46	59	72	85	98	111		
2	8	21	34	47	60	73	86	99	112		
3	9	22	35	48	61	74	87	Health 1.94	113		
4	10	23	36	49	62	75	88	101	114		
5	11	24	37	50	63	76	89	102	115		
6	12	25	38	51	64	77	90	103	116		
Aggregate AIA			Health = 3.56				American Health = 2.84				

Scenario #2 - General Monthly Wave I, 1997

Scenario #2 -- General Monthly				Rectangle = General Monthly	Circle = Health Monthly				
Version 1									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	Health 5.47	51	64	77	90	103	116
Version 7									
		13	26	39	Health 1.63	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	Am Hlth 1.62	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
Version 8									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	Health 2.75	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	Am Hlth 3.02	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
Version 14									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	Am Hlth 1.18	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	Health 3.91	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
Aggregate AIA				Health = 3.43		American Health = 2.05			

Scenario #3 - Health Monthly Wave I, 1997

Scenario #3 -- Health Monthly				Circle = Health Monthly					
Version 2									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
				Am Hlth 3.02 Health 1.50					
Version 4									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
				Am Hlth 4.76 Health 3.56					
Version 5									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
				Health 1.83 Am Hlth 1.74					
Version 9									
		13	26	39	52	65	78	91	104
		14	27	40	53	66	79	92	105
		15	28	41	54	67	80	93	106
		16	29	42	55	68	81	94	107
		17	30	43	56	69	82	95	108
		18	31	44	57	70	83	96	109
		19	32	45	58	71	84	97	110
1	7	20	33	46	59	72	85	98	111
2	8	21	34	47	60	73	86	99	112
3	9	22	35	48	61	74	87	100	113
4	10	23	36	49	62	75	88	101	114
5	11	24	37	50	63	76	89	102	115
6	12	25	38	51	64	77	90	103	116
				Am Hlth 1.90 Health 2.41					

