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Differences in Managed Care Drug Formularies: What Can Consumers Learn?

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Introduction

Managed care has been described as the last hope for non-governmental health system reform in the United States. With it there is hope that health care costs can be contained, quality of care increased, health outcomes improved, and access to care expanded through availability of lower-cost health insurance (Enthoven and Singer, 1996 and Zwanziger and Melnick, 1996). But for the managed care revolution to succeed, consumers and their agents must have information on health plan attributes. This paper investigates the use of drug formularies as sources of information for consumers on health plan coverage generosity.

While there have been attempts to rate health plans according to "report cards" such as the Health Plan Employer Data and Information Set (HEDIS), developed by the National Committee for Quality Assurance (NCQA), the indicators are generally in the area of prevention, such as pediatric immunization

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and mammograms and do not address access to new technology, an issue that appears to be especially important for consumers (see Sangle and Wolf, 1996 and Lohr, 1997). This paper explores differences between HMOs in access to one type of new technology - coverage of pharmaceuticals. We explore whether managed care plans have begun to differentiate themselves according to access to expensive drugs. If this differentiation does occur, with some plans offering access only to older, less expensive therapies while others offer newer, and often better drugs, then information on HMO drug formularies might be a useful measure of health plan quality for consumers.

Background

Despite rapid expansion in managed care enrollment, population surveys suggest that consumers are ambivalent toward them (see Miller and Luft, 1997). Though consumers overwhelmingly choose managed care alternatives when offered the chance, they undoubtedly do so because of substantially lower premiums. Once enrolled, they often express disappointment (Tudor, Riley, and Ingher, 1998). The dissatisfaction has prompted numerous legislative attempts to mandate HMO reform, both at state and federal level. Often these reform proposals are cast as a "Patients' Bill of Rights." The most frequent complaint is lack of coverage for services. Either specialty care is difficult to obtain, specific treatments are not authorized, or the latest pharmaceutical therapies are unavailable.

These coverage disputes reveal a more fundamental issue in health plan

coverage. Do consumers believe that their managed care health plan provides (or should provide) the same coverage as indemnity fee-for-service plans? Or do they believe that the significantly lower premium in the managed care plan is accompanied by reduced coverage? And in the broader context, does society at large believe that health care must be of a single quality, or does it accept the notion that there will be a spectrum of both health plan quality and price (see Friedman, 1997)?

While consumers readily accept the idea of a price-quality tradeoff in other markets for basic goods and services, such as housing, food, transportation, and education, there seems to be some ambivalence with regard to health care. Support for the unitary quality model comes from the legal system, too, which adheres to the principle that a single standard of medical care exists, and that anything less is "malpractice."

To be sure, markets in which different quality levels co-exist are frequently regulated to assure adherence to minimum quality standards. For example, all food, of whatever degree of luxury, must pass tests for cleanliness and safety. Similarly, automobiles, whose price and quality vary widely, must pass crash worthiness tests and be certified as to fuel economy. And all houses, whether inexpensive or luxurious, must comply with building and zoning codes.

The cost-effectiveness ratio measures the cost of producing a particular health outcome and is used frequently in managed care to justify coverage of some services and denial of others. A health plan that is cognizant of its role of

providing comprehensive health care for a defined population realizes that it can produce quality-adjusted life-years (or some other outcome) more cheaply through services like pediatric immunizations and use of generic drugs than by exotic treatments for advanced cancers. An HMO can frequently justify exclusion from coverage treatments that are relatively cost-ineffective if they can be classified as experimental or not medically necessary.

Though perfectly competitive markets are characterized by product homogeneity, imperfectly competitive markets exhibit product differentiation as producers compete for market share (see Chamberlin, 1948). Managed care markets are imperfectly competitive because of the small number of producers in each market area, and so one should expect to see health plans attempting to differentiate themselves according to "quality" or other attributes. One manifestation of this differentiation might be that a variety of cost-effectiveness thresholds would appear, each employed by a particular HMO, with premiums set according to this C-E ratio. More "rationalized" plans, covering only the most cost-effective therapies, would charge the lowest premiums, while the most "generous" plans would add coverage of treatments that were more costly per expected gain in outcome. Of course more generous plans would be more expensive. Plans might even offer multiple options themselves, making explicit coverage extensions that could be obtained in exchange for premium differentials. Consumers in this market would have choice along a quality-price tradeoff. Some would economize and purchase health plan coverage extending only to basic services, while others

would be willing to pay more in order to have more treatment options available in the future if they were needed. But the use of C-E by health plans is still rudimentary, at best (Power and Eisenberg, 1998).

A concern of health system analysts is whether consumers have sufficient information concerning health plans to make informed choices, especially as to the combination of cost and quality. With appropriate information consumers can choose according to their personal preferences, but without such information the market is likely to degenerate because only one dimension - cost - is readily measurable. Quality is not. Under such a market structure one would expect that managed care plans would compete on price alone and would let quality deteriorate, as long as it was maintained at a sufficient level to avoid being identified as dangerous. Two responses to asymmetric information are frequently discussed. The first is the introduction of a principal agent - often a government or professional regulatory body - to protect the public's interest (see Zweifel, 1998). The other is endogenous to the market itself, and is "signalling," by which one party (say, the insurer) attempts to convey to another party (say, consumers) a large amount of complex information by giving a smaller amount of information that is easier to comprehend, that allegedly represents the larger body of information (see Rodrik 1989 and Cooper 1992).

Examples of signalling include firms' use warranties to signal high quality products, generous gifts used to signal commitment to a relationship, job trainees accepting low-pay internships to signal commitment to a career path, and

advanced degrees to signal intelligence. For the signals to be valid, they must be observable, conveying otherwise unobservable information, and they must be too expensive for bluffers. Both of these conditions may be satisfied for pharmaceutical benefits, and so the following analysis tests whether there is variation in health plan formulary generosity.

Methodology

The analysis of health plan differentiation or segmentation compares drug formularies of managed care plans. There are two dimensions of the coverage decision that affect patients.

The first is the number of products within a therapeutic category that are available to patients. Drugs differ from one another in terms of efficacy, side-effect profile, and convenience. Drugs in the same therapeutic class often tend to act differently for different patients. Thus, it is advantageous to have numerous drugs within a particular therapeutic class available for patients. Failure to offer a wide variety of drugs restricts physicians to use products that may work well "in general," but may not be optimal for particular patients. The more "open" a formulary, the more trust the health plan places with prescribing physicians to choose the best drug for patients, without prescribing more expensive therapies when they are not needed. Of course every health plan allows coverage for drugs that are "off formulary," but physicians must comply with significant bureaucratic regulations in order to obtain an exemption and the regulations are intended to minimize the number of exemptions that are sought.

The second is coverage for expensive products within a therapeutic class, because these drugs are often the newer products that tend to offer improvement over older drugs, but at a higher price. In fact, a recent study shows a positive correlation between a drug's effectiveness and its price, suggesting that drugs can compete in the marketplace at a higher price than existing products if they offer significant therapeutic benefit (Lu and Comanor, 1998).

We develop a measure of health plan generosity that captures both the number of products included in a formulary, and their costliness. We define coverage of drug i by health plan j as c_{ij} , where $c_{ij} = 1$ if the drug is covered and 0 otherwise. A health plan's generosity, G_j , is the sum over all drugs of the availability of drug i , c_{ij} , weighted by its price, p_i , divided by the weighted product if *all* drugs were available ($c_{ij} = 1$ for all i). This can be written as

$$G_j = (\sum_i (c_{ij} p_i)) / (\sum_i (p_i)).$$

Generosity (G) ranges from 0 to 1. A difficulty with this formulation is that a health plan could compensate for the exclusion of a new and expensive drug by covering many older inexpensive products. To avoid this problem we allow the weight of the price variable to increase by raising it to a power, β ($\beta \geq 0$). The generalized formula is the following:

$$G_j = (\sum_i (c_{ij} p_i^\beta)) / (\sum_i (p_i^\beta)).$$

If $\beta = 0$, G collapses to the fraction of the drugs within a therapeutic class that is covered in a health plan, regardless of price. If $\beta = 1$, availability and price are equally weighted. As β rises ($\beta > 1$), the weighting of price (relative to that of

coverage) is increased. Our analysis will consider five values for β : $\beta = 0$, $\beta = 1/2$, $\beta = 1$, $\beta = 2$, and $\beta = 3$. We will investigate whether raising β increases our ability to discriminate between various health plans.

The Data

Two therapeutic categories were chosen for analysis on the basis of their overall importance in clinical practice: calcium-channel blockers for hypertension and antidepressants. The drugs within each class were identified either in The Medical Letter or The Triple i Managed Care Formulary Guide.

The price for each product was obtained from The Medical Letter and Drug Topics Red Book (Drug Topics Red Book), both of which report the Average Wholesale Price (AWP) for each product. The AWP is not necessarily the actual acquisition cost of drugs, especially for managed care plans, because they frequently obtain price discounts from manufacturers. Nonetheless, AWP prices are a commonly-used proxy for prices that drug purchasers pay, and even though discounted prices would be lower than AWP, relative prices - and especially price rankings - may be well represented by the AWP.

The formulary status of drugs is obtained from a compilation of formularies of major prominent health plans in California published in the Triple i Managed Care Formulary Guide. This book summarizes individual formularies from 18 managed care plans, including MediCal, California's Medicaid program. The formulary guide includes the formulary status of most, but not all of the drugs that are available. Coverage for Blue Cross of California is not included in the

formulary guide and was obtained directly from that plan's formulary (Blue Cross of California, 1997), increasing our sample of health plans to 19.

Table 1 presents the drugs for which AWP and formulary status were determined for the 19 health plans. The drugs are grouped according to therapeutic category: Calcium Channel Blockers (CCB) and Antidepressants (AD). AWP refers to the generic version of a product if it is multisource.

Table 1 Pharmaceuticals and AWP (1996 and 1997 update)

<u>Drug Name (Brand)</u>	<u>Drug Name (Generic)</u>	<u>AWP 1/</u>
Calcium Channel Blockers (dihydropyridines)		
Adalat	Nifedipine	\$41.86
Adalat CC	Nifedipine	26.11
Calan	Verapamil	26.40
Calan SR	Verapamil SR	27.78
Cardizem	Diltiazem	52.20
Cardizem CD	Diltiazem SR	31.32
Cardizem SR	Diltiazem SR	48.94
Dilacor XR	Diltiazem SR	27.79
DynaCirc	Isradipine	25.08
Isoptin	Verapamil	26.40
Norvasc	Amlodipine	36.60
Plendil	Felodipine	25.62
Procardia	Nifedipine	38.25
Tiazac	Diltiazem HCl	23.56
Verelan	Verapamil SR	33.88
Antidepressants		
Anafranil	Clomipramine	\$24.31
Desyrel	Trazodone	10.53
Effexor	Venlafaxine	68.68
Elavil	Amatriptyline	2.57
Eskalith	Lithium	15.98
Nardil	Phenelzine	48.29
Norpramin	Desipramine	24.53
Pamelor	Nortryptiline	11.66
Parnate	Tranlycypromine	43.29
Paxil	Paroxetine	61.95
Prozac	Fluoxetine	72.51
Serzone	Nefazodone	58.14
Sinequan	Doxepin HCl	10.64
Tofranil	Imipramine	3.70

Wellbutrin	Bupropion	73.70
Zoloft	Sertaline	66.54

1/ AWP for 30 days' treatment at the lowest usual dosage

The 19 health plans for which formulary data was available are listed in Table 2. In the remainder of the paper the plans are not identified because the analysis is too preliminary to justify either praise or criticism of specific health plans.

Table 2 Health Plans

Aetna Health Plans of California	Health Plan of the Redwoods
Blue Cross of California	Inland Empire Health Plan
Blue Shield of California	Maxicare California
California State Medi-Cal	National Health Plans
CaliforniaCare	Omni Healthcare
CareAmerica Health Plans	PacifiCare of California
CIGNA	Prudential Health Care
Foundation Health, a California HP	Sharp Health Plan
Health Net	UNITED Healthcare
Health Plan of San Mateo	

Results

Though most drugs are covered by the 19 health plans, considerable variation in health plan coverage is evident, as shown in Table 3 (The health plans are not displayed in alphabetical order).

Table 3 Drug Coverage by Health Plan by Drug Class

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CCB																			
Adalat	0	0	1	0	0	1	1	1	1	0	1	1	1	1	0	1	0	1	1
Adalat CC	1	1	1	1	0	1	1	1	1	0	1	1	1	1	1	1	1	1	1
Calan	0	1	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1	1	1
Calan SR	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cardizem	0	1	1	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1
Cardizem CD	0	0	1	1	1	1	1	0	0	1	1	0	1	0	0	1	0	0	1
Cardizem SR	1	1	1	1	1	1	1	0	1	1	1	1	1	1	0	1	0	1	1
Dilacor XR	0	1	1	1	0	0	1	0	1	0	1	1	0	1	1	1	1	1	1
DynaCirc	0	0	1	1	1	0	1	1	0	1	1	1	1	1	0	1	0	0	1
Isoptin	0	1	0	1	0	0	0	0	1	1	1	1	0	1	0	1	1	1	0
Norvasc	0	0	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
Plendil	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Procardia	1	1	1	0	1	0	1	0	1	1	1	1	0	1	0	1	1	1	1
Tiazac	0	1	0	0	1	0	1	1	1	0	1	1	0	1	1	1	1	0	0
Verelan	0	1	1	1	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1
ANTIDEPRESSANTS																			
Anafranil	0	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0
Desyrel	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Effexor	0	0	0	1	1	1	1	1	0	1	0	1	1	1	0	0	1	0	0
Elavil	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Eskalith	1	1	1	1	1	0	1	0	1	1	1	1	0	1	1	1	1	1	1
Nardil	0	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	1	1	1
Norpramin	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pamelor	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Parnate	0	1	1	1	1	1	1	1	0	1	0	1	1	1	1	0	1	1	1
Paxil	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
Prozac	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1
Serzone	1	1	1	1	0	1	0	1	0	0	1	1	1	1	0	1	1	0	0
Sinequan	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
Tofranil	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wellbutrin	0	1	1	1	0	0	1	0	1	1	1	1	0	0	0	0	0	0	1
Zoloft	1	0	1	1	1	1	0	1	1	1	0	0	1	0	1	1	1	0	1

For CCBs, for example, coverage of the 15 drugs included in the study ranges from 3/15 (20%) to 15/15 (100%) (mean = 72.7%, sd = 2.94). For the antidepressants the range in coverage is similar, ranging from 3/16 (19%) to 16/16 (100%), but the mean is higher and the distribution has lower variance (mean = 78.3%, sd = 2.82).

When coverage is weighted by price, differences in health plan coverage generosity of expensive drugs becomes more apparent. Health plan generosity (G) varies widely, as seen in Table 4. All five weighting schemes are shown: $\beta = 0$ to 3. Note that the case in which $\beta = 0$ is merely the proportion of drugs covered. As β rises the weight attached to price increases.

Table 4 Health Plan Generosity (G_j)

Health Plan Beta	Calcium Channel Blockers					AntiDepressants				
	0	1/2	1	2	3	0	1/2	1	2	3
1	0.20	0.21	0.22	0.24	0.26	0.19	0.22	0.24	0.24	0.24
2	0.73	0.73	0.72	0.72	0.73	0.75	0.74	0.73	0.71	0.70
3	0.87	0.88	0.90	0.92	0.95	0.88	0.85	0.84	0.84	0.84
4	0.80	0.80	0.80	0.81	0.82	1.00	1.00	1.00	1.00	1.00
5	0.67	0.67	0.68	0.70	0.73	0.88	0.82	0.78	0.73	0.71
6	0.53	0.54	0.55	0.56	0.56	0.88	0.86	0.85	0.83	0.80
7	0.93	0.94	0.94	0.96	0.97	0.88	0.82	0.79	0.77	0.76
8	0.60	0.60	0.59	0.59	0.60	0.88	0.86	0.85	0.83	0.80
9	0.87	0.87	0.88	0.90	0.92	0.69	0.64	0.62	0.63	0.66
10	0.73	0.74	0.75	0.77	0.80	0.94	0.91	0.90	0.90	0.91
11	1.00	1.00	1.00	1.00	1.00	0.75	0.67	0.62	0.60	0.61
12	0.87	0.87	0.88	0.90	0.92	0.81	0.76	0.73	0.69	0.67
13	0.67	0.69	0.71	0.76	0.81	0.81	0.76	0.73	0.66	0.62
14	0.73	0.73	0.73	0.75	0.79	0.69	0.59	0.53	0.47	0.43
15	0.40	0.37	0.35	0.28	0.22	0.75	0.64	0.56	0.47	0.43
16	0.93	0.93	0.93	0.93	0.94	0.75	0.66	0.61	0.56	0.55
17	0.67	0.65	0.63	0.58	0.56	0.94	0.90	0.87	0.83	0.80
18	0.73	0.75	0.76	0.80	0.84	0.75	0.63	0.55	0.45	0.41
19	0.87	0.88	0.90	0.92	0.95	0.81	0.77	0.75	0.74	0.74
sum	13.80	13.85	13.92	14.09	14.37	15.03	14.10	13.55	12.95	12.68
mean	0.73	0.73	0.73	0.74	0.76	0.79	0.74	0.71	0.68	0.67
std dev	0.20	0.20	0.20	0.21	0.23	0.17	0.17	0.17	0.19	0.19

The mean coverage for CCBs is 73% ($sd = 0.20$) and for ADs, the mean coverage is 79% ($sd = 0.17$). But the plans vary widely, with a few of them covering less than half of the products within a drug class, and some plans covering *all* drugs within a class.

The definition of G permits an examination that goes beyond counting available drugs, in order to identify plans that systematically exclude the more expensive products. As β ranges from 0 to 3 the relative weighting of price rises. If G rises, the plan is including higher priced products, while a falling G identifies systematic exclusion of the higher priced products.

For CCBs, for example, most of the G s rise as β rises from 0 to 3, suggesting that the more expensive CCB drugs are included in the formularies (though the overall generosity, as indicated by $G_{\beta=0}$ ranges from 20% to 100%). Only two plans (#15 and #17) appear to exclude the more expensive products.

For ADs, the evidence is reversed. Only plan #1 (whose overall generosity is the lowest, at 19% of drugs covered) has a rising G as β rises from 0 to 3. All the other plans do exclude the more expensive products. The exclusion is especially pronounced for plans #13 and #18, whose G falls 23% and 45%, respectively.

Though our study includes only 2 drug classes - far from the universe of products - an indication of consistency in generosity across drugs within the plans is important. This is measured by the coefficient of correlation between the two series of generosity values. The correlation between $G(\text{CCB})$ and $G(\text{AD})$ for $\beta = 2$ is $r = 0.36$, suggesting that consistency in coverage is not very great. Though the coefficient of correlation is not high, some health plans stand out from the others in terms of their coverage generosity. We define health plan generosity on a five-point scale:

Most generous is $G_j > (G_{\text{mean}} + \text{sd})$ for both drug classes

Generous is $G_j > (G_{\text{mean}} + \text{sd})$ for one drug class

Frugal is $G_j < (G_{\text{mean}} - \text{sd})$ for one drug class

Most Frugal is $G_j < (G_{\text{mean}} - \text{sd})$ for two drug classes

Medium is all other plans

By this definition, there are no "most generous" health plans, but plans 4, 7, 10, and 11 are classified as "generous." On the other hand, plans 1 and 15 are "most frugal", while plans 14 and 18 are "frugal." The remaining 12 plans are "medium."

Caveats

This study should be understood as preliminary in several respects. First of all, only two drug therapeutic classifications are considered, thereby omitting many other important categories. Secondly, the price data does not measure actual transaction prices. Another omission of this study is that we are unable to analyze the correlation between pharmaceutical coverage and coverage for other types of services. It is uncertain whether or not pharmaceutical coverage is representative of other areas of coverage. The condition that a successful signal must be costly enough to deter firms from posing as being generous when they are not, is also untested. Hence, the validity of pharmaceutical benefits as a signal is unclear. Lastly, without information on health plan premiums, one cannot test the hypothesis that coverage generosity is positively correlated with premiums. Plan premium would also be misleading without an indicator of overall

plan coverage generosity because it reflects overall coverage, and may be totally unrelated to generosity in one sector such as pharmaceuticals.

Conclusions

Our findings indicate that coverage of pharmaceuticals by the managed care plans studied tended to be broad, covering most drugs in each drug class. There was, however, wide variation in health plan coverage for pharmaceuticals, with some plans standing out as being either especially generous or especially frugal. The implication is that formulary generosity may be signaling overall health plan coverage.

As health plans explicitly differentiate themselves according to coverage generosity, they will have to deal with the general societal concern over explicit rationing of health care. Health plans may be loath to deny coverage for drugs that are covered in other plans for fear of subscriber dissatisfaction. Development of managed care markets will be slowed while society clarifies its desires concerning the allocation of scarce resources in health care and confronts the dilemma of whether multiple quality of care standards should be allowed to coexist openly or whether we will continue our policy ambivalence, with some institutions (e.g. the courts) attempting to maintain uniform standards, while markets are allowing differentiation to exist. Until the social contract is better spelled out consumers will be at a loss trying to find health plans that meet their quality and price criteria.

References

References

Blue Cross of California, Clinical Drug Formulary, (Woodland Hills CA: Blue Cross of California), January 1997.

Chamberlin EH, Theory of Monopolistic Competition, 5th ed. (Cambridge, Mass: Harvard University Press), 1948.

Cooper TE, "Signal Facilitation: A Policy Response to Asymmetric Information," Journal of Business 65(3): 431-450, 1992.

Drug Topics Red Book, (Drug Topics), 1996 and 1997 Supplement.

Enthoven AC, and Singer SJ, "Managed Competition and California's Health Care Economy," Health Affairs 15(1): 39-57).

Friedman E, "Managed Care, Rationing, and Quality: A Tangled Relationship," Health Affairs 16(3): 174-182, May/June 1997.

Lohr, KN, "How do we Measure Quality?" Health Affairs, 16(1): 22-25, May/June 1997.

Lu J and Comanor WS, , Review of Economics and Statistics, 1998.

Power EJ and Eisenberg JM, "Are We Ready to Use Cost-Effectiveness Analysis in Health Care Decision-Making?" Medical Care (36(5): MS10-17, May 1998.

The Medical Letter, (New Rochelle NY: The Medical Letter, Inc.), selected issues.

Triple i Managed Care Formulary Guide: California (vol 2, no 3), (New York: MediMedia USA, Inc.), Fall 1997/Winter 1998.

Miller RH and Luft HS, "Does Managed Care Lead to Better or Worse Quality of Care," Health Affairs 16(5): 7-25, September/October 1997.

Rodrik D, "Promises, Promises: Credible Policy Reform via Signalling," Economic Journal 99(397): 756-772, 1989.

Sangl JA and Wolf LF, "Role of Consumer Information in Today's Health Care System," Health Care Financing Review, 18(1):1-8, Fall 1996.

Tudor CG, Riley G, and Ingher M, "Satisfaction with Care: Do Medicare HMOs Make a Difference?" Health Affairs 17(2):165-176, March/April 1998.

Zwanziger J and Melnick GA, "Can Managed Care Plans Control Health Care Costs?" *Health Affairs* 15(2):185-199, Summer 1996.