Articles

Cost-Sharing and the Use of General Medical Physicians for Outpatient Mental Health Care

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Many patients with emotional disorders receive their mental health care from general medical physicians. In this article, we examine differences in costs and style between mental health care delivered by mental health specialists and that provided by general medical physicians, and the sensitivity to insurance of the patient's choice of mental health care provider. We use data from a randomized trial of cost-sharing, the RAND Health Insurance Experiment. Even when all outpatient mental health care was free (up to 52 visits a year), one-half of the users of outpatient mental health services visited general medical providers only. This half accounted for only 5 percent of outpatient mental health care expenditures, because the treatment delivered by general medical providers was much less intensive than that delivered by mental health specialists. Mental health status, at enrollment, was similar for those who received their mental health care from either provider group. Despite the large difference in cost of care, the choice of provider (mental

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health specialist versus general medical provider) was not sensitive to the generosity of insurance.

INTRODUCTION

When people seek professional help for mental disorders or emotional problems, they have the option of choosing a formally trained mental health specialist, such as a psychiatrist, or a general medical physician, such as an internist. Recent studies indicate that patients are about as likely to choose either type of provider [1–3]. Among the explanations that have been offered for the relatively high use of general medical physicians for mental health care are limitations on insurance coverage for care delivered by mental health specialists and the high cost of that care [4]. Is the cost of care delivered by general medical providers significantly lower than that provided by mental health specialists? Do changes in insurance coverage affect the patient's choice of provider for mental health care? In this article, we answer these questions using data from a randomized trial of cost-sharing, the RAND Health Insurance Experiment.

Current policy issues emphasize the importance of obtaining answers to these questions. If the choice of provider is sensitive to insurance generosity, increases in deductible or coinsurance rates could cause more patients to seek mental health care delivered by general medical physicians, rather than by mental health specialists. Further, some prepaid plans reimburse care delivered by mental health specialists only on referral by a primary care physician. If the care delivered by general medical providers is truly less expensive, then such "gatekeeper" policies could reduce mental health care costs.

Liptzin et al. [4], Horgan [5], and Wells et al. [6] provided the only empirical evidence to date that the annual costs of mental health care delivered by general providers are lower than the costs of care delivered by mental health specialists. Several possible reasons may account for the difference in costs. First, general medical providers may provide a less intensive style of treatment, relative to mental health specialty care, to similar patients. The literature suggests that general medical physicians rely on psychotropic medication and brief supportive therapy, while mental health specialists rely on more intensive psychotherapy [2]. These differences are consistent with differences between the two types of provider in training and the focus of clinical practice.

The second possible reason for a difference in costs is that general medical providers could be treating patients with less severe mental disorders. Studies of differences in case mix have reached conflicting conclusions. Most studies have relied on comparisons of provider-assigned diagnoses, which are known to be unreliable indicators of diagnostic status or severity of illness [2, 7]. In particular, general medical providers and mental health specialists could have different criteria for assigning diagnoses.

The third reason for a difference in cost could be differences in coverage. Persons with no or little coverage for mental health services could be opting to receive care from general medical providers. The provider could be providing less care because the patient is not reimbursed. Because previous studies used samples that could select their own coverage, it has been impossible to separate the effects of differences in treatment style or case mix of patients from the effects of generosity of insurance coverage.

While there have been several previous studies of the effects of insurance coverage on use of mental health services [5, 8–15], previous studies of the effects of variation in cost-sharing on choice of provider have focused exclusively on choice of provider for general health care. An underlying assumption in this literature is that patients weigh the benefits of purchasing higher quality care against the cost of that care and weigh the benefits of searching for lower prices against the cost of the search [16].

Several studies suggest that persons with insurance, relative to those with no insurance, are more likely to obtain care from providers in private practice and less likely to obtain care from emergency rooms or clinics (17–19). Studies also suggest that persons facing a lower out-of-pocket price tend to obtain care from physicians who are board certified or have other characteristics associated with high-quality care (17, 20, 21). In these nonexperimental studies, however, generosity of coverage was confounded with self-selection of coverage. Marquis [16] estimated the effects of variation in cost-sharing on choice of primary care provider, using data from the RAND Health Insurance Experiment (HIE). In the experiment, health insurance plans that varied in generosity of coverage were randomly assigned to families representative of a general population; thus, the experiment avoids the design flaws of nonexperimental studies. Marquis found that variation in insurance generosity, in the absence of self-selection of coverage, was not significantly related to either the choice of primary care provider or to the relative price of different types of provider. Are similar conclusions applicable to choice of mental health provider?

We previously reported the effects of variation in cost-sharing on the use of outpatient mental health services, using data from the RAND Health Insurance Experiment (HIE) [6, 8, 9]. We found that participants facing no out-of-pocket cost (free care) were twice as likely to seek mental health services as those on a plan in which participants paid 95 percent coinsurance until they reached an upper limit on out-of-pocket expense. The free-care group had 73 percent higher expenditures on all ambulatory mental health services, including care delivered by general medical providers, than the 95 percent plan group [6, 8]. Recently, in an analysis of all site years of data, we determined that costs of outpatient psychotherapy alone were 133 percent higher for the free-care group than for the 95 percent plan group [9]. We have not previously focused, however, on the effects of cost-sharing on the choice of provider, given any use of mental health services. We do so here.

METHODS

THE HIE DESIGN

Between 1974 and 1977, the HIE enrolled families in six sites: Dayton, Ohio; Seattle, Washington; Fitchburg, Massachusetts; Franklin County, Massachusetts; Charleston, South Carolina; and Georgetown County, South Carolina. Families enrolled for either three or five years. They were assigned to different fee-for-service insurance plans using a variant of random sampling [22].

The experimental plans varied in two principal dimensions: the coinsurance rate (percent paid by the family) and the Maximum Dollar Expenditure (MDE or upper limit on family out-of-pocket annual expenses). The coinsurance rates were 0 (free care), 25, 50, or 95 percent. The MDE or upper limit was either 5, 10, or 15 percent of family income up to a maximum of $1,000. Beyond the MDE, health care was free to the family.[1] One plan differed in having a 25 percent coinsurance rate for medical services but a 50 percent coinsurance rate for outpatient mental health and dental services; we refer to this later as the 25/50 plan. Another plan differed in that all inpatient care was free but outpatient services were subjected to a coinsurance rate of 95 percent up to a "deductible" of $150 per person or $450 per family per year; for participants on this Individual Deductible Plan, ambulatory care was free beyond the $150 limit. All plans covered the same wide variety of providers and services, including outpatient psychotherapy

services up to 52 visits per year per person delivered by physicians, psychologists, social workers, or nurses.

THE SAMPLE

The sample is a random sample of each site's population, but the following groups were not eligible: (1) those eligible for Medicare; (2) families with incomes in excess of $56,000 (in 1983 dollars); (3) those in jails or institutionalized in long-term hospitals; (4) the military and their dependents; and (5) veterans with service-connected disabilities. For fuller detail on the sample and design, see Newhouse et al. [23].

The sample used in this article consists of those enrollees who participated for at least one full year in the first three years of the experiment. The sample excludes the three-year sample in South Carolina because data were not yet available, and excludes data on two plans for the first year of Dayton because psychotherapy was not a covered service in those plans. The sample consists of 12,435 person-years of participation.

USE OF OUTPATIENT MENTAL HEALTH SERVICES

We used data from claims filed by participants, including those for covered but unreimbursed expenses, to identify use of outpatient mental health services.

Providers trained as psychiatrists, psychologists, psychiatric social workers, or other mental health specialists are designated as "mental health specialists." All other providers are designated as "general medical providers."

We define a mental health service as any mental health evaluation or treatment as indicated by either a mental health procedure or diagnosis, according to the standard coding system. We also performed a sensitivity analysis that included visits without mental health procedures or diagnoses but in which psychotropic drugs were prescribed in the absence of a physical reason (such as backache) for the prescription. The list of physical reasons consisted of nonpsychiatric indications listed in the *Physicians Desk Reference* and in pharmacology texts for antipsychotics, antidepressants, and minor tranquilizers (i.e., sedative/hypnotics, anxiolytics). The complete algorithm is given in Wells et al. [6].

Physicians completing the claims forms were asked to assign each procedure (including tests performed) to one or more problems being treated. To assign charges to mental health, we prorated the charges equally over all the diagnoses linked to each procedure. We also used

alternative strategies, such as assigning all of the cost or none of the costs of multipurpose visits to mental health costs, with no change in conclusions about the effects of cost-sharing.

EXPLANATORY VARIABLES

Our explanatory variables consist of health status, patient satisfaction, and sociodemographic and economic status, and insurance plan.

The Mental Health Inventory (MHI) is a 38-item, self-administered questionnaire designed specifically to measure mental health in the Health Insurance Experiment [24]. The MHI defines mental health in terms of symptoms of psychological distress (i.e., anxiety and depression) and psychological well-being. The internal-consistency reliability of the MHI is .96 for the total HIE sample. The MHI is a strong predictor of use of outpatient mental health services [25].

Our other measures of health status and of patient satisfaction are: (1) general health perceptions; (2) physical limitations; (3) chronic disease status; and (4) general satisfaction with medical care [26]. Each of the health measures is based on the self-administered Medical History Questionnaires filled out by the individual or by parents for children under age 14.

We also included measures of age, sex, race, family income, family size, and other experimental effects, such as assignment to the study for three or five years. With the exception of family size, the data were collected before or at enrollment in the study.

STATISTICAL METHODS

We used multiple regression (probit) equations rather than the more common analysis of variance (ANOVA) to estimate the probability of any use of outpatient mental health services and the choice of provider (any mental health specialist versus only general medical providers) given any use. Covariates for the analysis included socioeconomic and demographic factors, health status, satisfaction with care, and variables indicating insurance plan and other experimental effects. We report predictions and standard errors generated through the regression model. Our plan predictions are standardized to adjust for any imbalance across insurance plans in other covariates. We also present the actual percent of users visiting a mental health specialist by plan (i.e., the unadjusted sample mean).

To examine the effects of insurance plan and individual characteristics on use of services, we used data on all site years. To describe use

during the typical year, we used data from the second year of participation. We chose the second year because it represents a steady-state year, i.e., one year after starting the experiment and at least one year before the end.

The *t*-statistics we present are calculated using the standard error of the difference between the two subgroups compared. Unlike simple ANOVA comparisons, the standard error of the difference cannot be computed directly from the standard errors for the subgroups, because the predictions are correlated. Further, the *t*-statistics have been deflated, using techniques described in Duan et al. [27] to account for the lack of independence in the data: the correlation in use among family members and for repeated observations on each individual over time.

RESULTS

USE OF MENTAL HEALTH SERVICES, YEAR 2 OF THE EXPERIMENT

During year 2 of the HIE, 7.1 percent of enrollees have one or more outpatient visits with a mental health procedure or diagnosis. When we include psychotropic medication (in the absence of medical indications) as a visit criterion, this figure increases to 9.2 percent, due solely to the identification of new users of general medical providers.

Depending on definition, 46–58 percent of users of outpatient mental health services receive their care only from general medical providers. Only 9–10 percent of users have outpatient mental health care from both types of providers.

Most of the users in this "overlap" category appear to visit general medical providers as an adjunct to care from mental health specialists. For example, in year 1, the care delivered by general medical providers to 78 percent of persons in this overlap category consisted of an evaluation of an organic cause of the mental problem, a prescription for a psychotropic medication, or a referral to a mental health specialist. The remaining 22 percent used both types of provider as independent sources of mental health care.

Private practice psychiatrists and psychologists are the "modal" provider (that is, the provider type for the highest proportion of visits) for 70 percent of users of mental health specialists. General and family practitioners and internists are the "modal" provider type for 67 percent of users of general medical providers for mental health care.

COSTS BY PROVIDER GROUP, YEAR 2 OF THE EXPERIMENT

The median annual expenditure per user for services from mental health specialists is $280, as compared to $14 for services from general medical providers (dollars at the time of the experiment). The total cost of mental health care from general medical providers is about 5 percent of all outpatient mental health care expenses.

The lower expense for care from general medical providers is due to both lower charges per visit and fewer visits per user. For example, the average cost of the mental health care delivered during a visit to a mental health specialist is $33; for a visit to a general medical provider, average cost is $16. Even when we include the total cost of office visits to general medical providers (excluding procedures), the cost per visit is about one-third higher for mental health specialists. The mean number of visits per user per year for mental health care from a mental health specialist is 11, but the comparable number for care from general medical providers is 2.

The mental health visits to mental health specialists are very different from those to general medical providers. Over 90 percent of users of mental health specialists receive psychotherapy (mostly individual 45–60-minute sessions), while only 4 percent of users of general medical providers for mental health care receive psychotherapy. Most of the remainder are charged for an "office visit." Our data indicate that mental health visits to general medical providers commonly involve care for physical as well as mental disorders. For example, 58 percent of users of only general medical providers have one or more "mental health" visits where the *primary* diagnosis is *not* a mental disorder, as opposed to 13 percent of users of only mental health specialists.

EFFECTS OF COST-SHARING ON PROVIDER CHOICE, ALL EXPERIMENTAL YEARS

As shown in Table 1, there is roughly a doubling in the percentage of enrollees predicted to use any outpatient mental health services as a function of insurance plan (column 3 is adapted from Manning et al. [8]). By contrast, the percentage of all *users* of mental health services predicted to visit a mental health specialist does not vary significantly by plan ($p > .10$).

The percent of users predicted to visit a mental health specialist is quite similar for the free plan, the 25 percent plan, the 95 percent plan, and the individual deductible plans (range is 51–57 percent). Further, the 95 percent confidence intervals for these estimates are small enough

Table 1: Predicted Effect of Insurance Plan on Annual Use of Outpatient Mental Health Services

	Sample Size		*Predicted % of Enrollees with Any Use*		*% of Mental Health Care Users Visiting Mental Health Care Specialists*		
Plan	*Enrollment*	*Analytic (person-years)*	*%*	*t*†	*Actual (Unadjusted)*	*Predicted* (Standard Error)*	*t*†
Free	1,433	4,281	8.8‡	—	55	57 (4.4)	—
25% Medical/ 25% Mental	539	1,572	7.8	-0.73	50	51 (7.3)	-0.81
25% Medical/ 50% Mental	358	1,038	6.0	-1.45	50	44 (9.0)	-1.42
50% Medical/ 50% Mental	326	932	4.6	-2.19	31	39 (11.4)	-1.60
95%	885	2,152	4.3	-3.13	61	56 (7.3)	-0.13
Individual deductible	903	2,460	7.7	-0.72	63	54 (5.7)	-0.44

*Predictions are adjusted for site and other nonplan imbalance; standardized to full sample, year 2.

†Compared with free plan.

‡Standard error = 1.3; column adapted from Manning et al., 1986.

to rule out a moderate or large effect of insurance plan on provider choice (Table 1).

The provider-choice predictions for the 25/50 and 50/50 plans are roughly 30–40 percent lower than the free plan estimate. However, the confidence intervals for these estimates are large, due to the low number of enrollees and users on these plans; thus, we do not have the precision to rule out moderately large effects on provider choice for these plans.

The prediction for the 50/50 plan may be low partly because this plan had a relatively high proportion of enrollees in Dayton, Ohio; users in Dayton have a relatively lower use of mental health specialists than users in the other sites.

To determine the sensitivity of our results to possible underreporting of mental health care, we also examined the response to cost-sharing using a definition of a mental health visit that included our psychotropic medication criterion. The choice of provider type is still not significantly related to variation in cost-sharing when the additional visits identified by the psychotropic medication criterion are added.

Mental Health Status and Provider Choice

Our data base included two types of information on case mix: enrollment mental health index and provider-assigned diagnoses on claims forms. Other factors equal, there is a weak and statistically insignificant tendency for those with poorer mental health status at enrollment to visit a mental health specialist rather than only general medical providers, given any use of outpatient mental health care. The t-statistic for the regression coefficient for MHI in the provider-choice equation ($t = 1.27$) is not significant at the 5 percent level (Table 2). Further, the magnitude of the effect of enrollment mental health status on provider choice is small. For each of the lowest four quintiles of enrollment MHI (determined from the entire sample), 50–60 percent of users visit a mental health specialist rather than only general medical providers. (The estimate for the upper quintile is very imprecise because there are so few users in that quintile).

We caution the reader, however, that the weak effect of MHI on provider choice applies to users drawn from a general population. Had we limited our analysis to a severely ill population, we could well have observed that a greater proportion of these users visit mental health specialists. Our sample does *not* contain enough severely ill patients to test this hypothesis.

Table 2: Regression Results for Annual Probability of Visiting a Mental Health Specialist, Given Any Use of Outpatient Mental Health Services

Variable	*Coefficient*	t
Intercept	-4.0685	-1.95
Mental Coinsurance*		
25	-0.1914	-0.82
50	-0.5684	-1.57
95	-0.0314	-0.13
25/50 plan	0.1714	0.39
Individual deductible plan	-0.0816	-0.44
Log family income	0.0029	0.02
Log family size	-0.0942	-0.66
Race (1 = black)	-0.5074	-1.24
Age-Sex†		
Child	0.6463	2.22
Female adult	-0.2926	-2.03
Age	-0.0784	-3.53
Age-squared	0.8712	3.53
Site‡		
Dayton	-0.6637	-3.12
Massachusetts	-0.0488	-0.30
South Carolina	-0.6264	-1.88
Log MHI	-0.3147	-1.27
Log GHI	0.8305	3.05
Any physical limitation	0.2845	1.53
Any chronic disease	0.4480	1.07
Log chronic disease	-0.0471	-0.40
Education§		
Less than 12 years	-0.2826	-1.48
Some college	0.3124	1.59
College	0.2931	1.47
Satisfaction with medical provider	-0.0092	-2.41
Occupation (1 = professional)	0.4124	2.46
Year 2	0.1003	0.78
Year 3	0.2827	2.17

*The coinsurance rate of mental health service. Free care is the omitted group.

†Adult male is the omitted group.

‡Seattle is the omitted group.

§Exactly 12 years is the omitted group.

Further, we found that general medical providers deliver the same amount of care (one or two office visits a year) regardless of the patient's enrollment mental health. Mental health specialists provide significantly more care to patients who are sicker ($t = 2.4$, $p = .02$).

We examined the most serious diagnosis assigned by providers to each user during year 2. The data indicate that users of mental health specialists are more than twice as likely as users of general medical providers to ever receive a very serious diagnosis such as psychosis; users of general medical providers are nearly twice as likely to receive nonspecific diagnoses such as adjustment disorder.

Other Factors Related to Provider Choice

As shown in Table 2, when other factors are held constant, age, sex, site, physical health, occupation, and satisfaction with regular medical provider all independently predict choice of provider for users of outpatient mental health care. Among users, children are relatively more likely than adult males to visit a mental health specialist; female adults are relatively more likely to visit general medical providers only. It should be noted, however, that the absolute prevalence of use of either provider group is higher for women than men. As noted above, users in Dayton are less likely to visit mental health specialists than users in other sites. Users with better perceived health status are relatively more likely to visit a mental health specialist. There is an insignificant tendency, however, for users with physical limitations to visit mental health specialists. Users who are professionals are more likely to receive their mental health care from mental health specialists. Those who are more dissatisfied with their regular medical provider are more apt to receive their care from mental health specialists than those who are satisfied with their regular medical provider.

DISCUSSION

We found that among users of outpatient mental health services drawn from a nonelderly general population, roughly one-half received all their care from general medical providers, mainly internists and family practitioners. These providers treated their patients for approximately 1/20th the cost of care delivered by mental health specialists.

The two provider groups deliver very different styles of care. For the average patient, general medical providers deliver their mental health care in 2 brief office visits, while mental health specialists pro-

vide 11 individual psychotherapy sessions. Further, mental health visits delivered by general medical providers tend to address physical as well as mental health problems and commonly do not have the mental health problem as the primary diagnosis. This large difference in style does *not* appear to be a result of differences in case mix: enrollment mental health was similar for both groups of users. We did observe some differences in the diagnoses assigned by providers (more patients of mental health specialists have diagnoses of psychoses). However, this relatively small difference would not explain the large observed difference in median costs; the median is not sensitive to outliers. We conclude that the difference between provider groups in style of care is real (i.e., comparable patients will receive different treatments) and accounts for most of the large difference in costs.

We found that despite the large difference between the cost of outpatient mental health care delivered by mental health specialists and that delivered by general medical providers, the patient's choice of provider is not particularly sensitive to insurance provisions. For some plan comparisons, we had poor precision for detecting moderately large plan effects. Nevertheless, our confidence interval for the most extreme plan comparison (95 percent coinsurance up to an upper limit on out-of-pocket expenses versus free care) was much narrower. This finding increases our confidence in concluding that there is no large effect of plan on provider choice—especially when the very large difference in costs would lead one to anticipate a very large plan effect. Our finding is consistent with the conclusion of Marquis [9], who found no effect of HIE plan on choice of provider for primary care services. By contrast, nonexperimental studies found that persons facing lower out-of-pocket costs tended to select more costly providers for general health care.

Although we did not observe significant effects of mental health status or insurance plan, several other factors predicted provider choice for users of mental health services, particularly age and sex, socioeconomic status, site, physical health status, and satisfaction with regular medical provider. There have been a few previous studies of the association of demographic factors with the type of provider used for mental health care. Shurman et al. [28] found that mental health visits delivered by nonpsychiatrist physicians, relative to those delivered by psychiatrists, were disproportionately made by female, nonwhite, and elderly patients. Shapiro et al. [3] observed similar age and sex effects. Horgan [29] found that among users, women were more likely than men to visit general medical providers and that higher-educated users were relatively more likely to visit mental health specialists. Our find-

ings illustrate that similar effects of age, sex, and socioeconomic status are observed even after controlling for differences in insurance coverage.

Our conclusions do not apply to the use of outpatient mental health services by the elderly or very high income groups, who were excluded from the HIE sample. General medical providers and mental health specialists could differ considerably in the extent to which they treat those groups.

Our estimate of the effect of cost-sharing on provider choice pertains when coverage is assigned to a representative group of people, for example, by a legislative mandate for coverage of mental health services. Any single insurer that improved its mental health coverage might observe a larger effect of cost-sharing on provider choice, because families anticipating the use of services from mental health specialists would select better coverage to reduce their health care costs.

Our estimates apply to the HIE insurance plans as a whole. We did not estimate separately the effects of the coinsurance rate, the upper limit on out-of-pocket expenses, or the limit on covered psychotherapy visits on choice of provider. Further, we did not examine differences in provider choice for persons with no versus some coverage for mental health care. In the absence of an upper limit on out-of-pocket expenses, the plans would have been less generous. We doubt that this could have affected our conclusions much, however, given the restricted response of provider choice to the HIE plans as a whole, which differed sufficiently in generosity to cause a twofold difference in the probability of any use of outpatient mental health care.

Our findings raise important questions about the possible effects of gatekeeper policies. If primary care physicians were to be the gatekeepers for care delivered by mental health specialists, as is currently the case for some prepaid plans, the number of patients seen by primary care physicians for mental health care could potentially double. If these patients remained with the primary care provider, they could receive much less intensive care at a much lower cost than they would otherwise have received from mental health specialists.

Little is known about the relative quality or appropriateness of the mental health care delivered by mental health specialists in comparison to that of general medical physicians. One can find evidence that each provider group prescribes psychotropic medication appropriately or inappropriately [30–32]. There are numerous studies of the efficacy of psychotherapy, but virtually no studies exist of the efficacy of the mental health care delivered by general medical physicians.

The HIE collected data on mental health status annually through-

out the experiment. The HIE design is not ideal for determining the efficacy of care for users of each provider group because individuals were not randomized to treatment by one type of provider or the other. To examine this question, we would have to use the HIE data as nonexperimental data. We have used the HIE data, however, to examine the effects of insurance plans on mental health status at exit. This analysis maintains the experimental design. While the HIE plan had little effect on the mental health of the average adult at exit from the experiment, for sick and poor individuals, we cannot rule out a clinically meaningful effect [33]. Clearly, additional studies are needed that are specifically designed to compare the efficacy of mental health care delivered to specific patient populations by mental health specialists and by general medical physicians.

In sum, we found that while general medical physicians deliver mental health care to a large proportion of patients, the intensity and the cost of that care is much less than that provided by mental health specialists. Yet the patient populations treated by each group were not much different at enrollment (i.e., prior to treatment under HIE coverage) in mental health. The choice of provider for outpatient mental health services is not sensitive to insurance generosity.

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NOTE

1. These amounts refer to dollars at the time of the Health Insurance Experiment (over a seven-year period); $1,000 of medical care in 1975 is equivalent to $2,400 of medical care in 1984.

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