New Health Professionals and the Physician Role: An Hypothesis from Kaiser Experience

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THE EASE AND RAPIDITY with which new health professionals are introduced into medical care delivery systems depend heavily upon physicians' attitudes, because physicians typically make the decisions about whether and how the new providers are to be used. For that reason physician receptivity has received substantial attention in the growing literature about provider innovation.

The focus of such research and conjecture, however, has been upon whether employment of physician's assistants and nurse practitioners serves the MD's interests in increased income or increased leisure time, or both. This paper inquires into another factor which may influence physician receptivity; namely, whether the services of the new professional are perceived as role-elevating or role-threatening for the physician. The paper develops the hypothesis that the degree of role challenge is a factor determining physician acceptance or rejection of physician's assistants (PAs), Medex, certified nurse-midwives (CNMs), pediatric nurse practitioners (PNPs), and similar personnel.

The hypothesis emerged indirectly from Kaiser researches which had quite different purposes; that is, researches which attempted to assess the way in which new professionals were being introduced and used, their cost effectiveness, and patients' responses to them. (*1, 2*). Not until 1973, in Kaiser's third year of experience with PAs and nurse practitioners, were disparities in the two programs' growth patterns clearly observable and, when we attempted to account for the disparities, we could develop no reasonably satisfactory explanation until we included differential role impact in the list of variables under scrutiny.

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The paper is a revision of a presentation to the American Sociological Association meeting in New York City in August 1973. The research was supported in part by Public Health Service Regional Medical Programs contract No. HSM 110-72-372 and by grant No. CH 00235 from the National Center for Health Services Research and Development, Health Resources Administration.

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The main section of the paper sets forth the role-challenge hypothesis as it was developed in 1973. Then, in a postscript, the degree to which the hypothesis has been borne out by subsequent events is discussed. Materials from which the hypothesis was originally formed and subsequently evaluated included formal and informal interviews with all of the new professionals; with many of the physicians, especially those most intimately involved in decisions about the PAs and nurse practitioners; and with nurses, administrators, and other Kaiser personnel.

The Role-Challenge Hypothesis

In July 1970, the Kaiser Permanente Health Plan in the metropolitan area of Portland introduced its first pediatric nurse practitioner; she was followed 2 months later by the first physician's assistant and then in February 1971 by the first certified nurse-midwife. Those developments were widely perceived within this medical care delivery system as initial steps toward full-fledged services of the new health professionals in the departments of pediatrics, medicine, and obstetrics-gynecology (OB-GYN).

Nearly 3 years later the system still had only one PNP, and the number of CNMs, which had risen to two, had again fallen to one. The number of PAs, however, had grown to seven, two of whom were assigned to minor surgery.

Why had the PA program expanded and the nurse practitioner program failed to expand? Although several variables can be identified as contributing to the disparity not only in growth rate but in job-delegation patterns as well, the most important factor may have been the differential implications which the respective programs held for the role and status of physician. The character and intensity of the role and status consequences, as they varied among the three medical specialties, are at the heart of the discussion which follows. First, however, we shall describe the context of the innovations and briefly review factors other than role challenge which may have helped to shape the disparate results.

The Kaiser delivery system provides comprehensive prepaid medical care for around 200,000 health plan members who live in the Portland metropolitan area. The system comprises a centrally located hospital and

six outpatient clinics; one clinic is located across the Columbia River in Vancouver, Wash. Physician services are supplied by a partnership of 170 full-time physicians under a capitation contract with the health plan. A distinctive feature of the physician group is that nearly all are specialists; even the department of medicine had no general practitioners until recently, and there are still only a few in that department. General practitioners (GPs) have been used for several years, however, in walk-in or emergency care at the hospital.

In the late 1960s the health plan membership seemed to be growing faster than physicians could be added easily to the physician partnership, particularly in some specialties, with the result that appointment lags became a serious issue and physicians complained about heavy patient loads in the clinics. The medical director's strong disposition to bring in physician's assistants and nurse practitioners, from the "new health professional" training programs that were springing up around the country, evoked substantial negative response from some department chiefs in the form of open opposition or passive resistance. Professional norms (for example, physician responsibility for quality of care) frequently were invoked to justify contravention of bureaucratic goals (for example, mitigation of members' complaints about delays in service).

If the new professionals were introduced, they would be employees of the health plan rather than of the physician partnership; thus physicians theoretically, at least in the short run, might buy increased leisure at zero cost. The health plan would gain not only faster service for its members but also, it might reasonably be presumed, greater cost efficiency from the employment of lower salary personnel for some routine medical services.

With respect to this basic structure of economic incentives and restraints, physicians in the three medical specialties which introduced the new professionals were similarly placed. Differences in growth rate and job delegation in the nurse practitioner and PA programs therefore must be explained by other factors, to which we now turn.

Receptivity to the new professionals in the three departments. When the 1960s drew to a close, the three specialties—medicine, pediatrics, and OB-GYN—faced considerably different recruitment situations as they were perceived in the Kaiser system. Pediatricians were relatively plentiful. Internists were more difficult to obtain. The most difficult market setting for recruitment was in OB-GYN, especially after the liberalization of abortion laws made fee-for-service practice almost explosively lucrative. Thus, on market considerations alone, one would have expected the OB-GYN chief to be the most receptive, the pediatrics chief the least receptive, and the medical department head in the middle with respect to the proposed innovation.

That these expectations were not realized may be explained in part by differences among the chiefs in ideology and temperament. Relatively nonhierarchical in his perception of the proper interrelationships of health care providers, the head of the department of medicine not only was favorably disposed toward the use of PAs but also was inclined to define the role of the new personnel less narrowly. Moreover, once the innovation occurred, he handled the inevitable abrasions with finesse and firmness. The system's associate medical director, who had provided the primary thrust for innovation, who had shepherded the introduction of PAs into the system, and who continued to put the weight of his office behind the program, was and is a practicing internist in the department of medicine. In addition, he was chief of the clinic in which three of the first four PAs worked during the critical period of job and role definition.

No comparable push existed in the pediatrics department, although the chief was not unreceptive to nurse practitioners. The OB-GYN head was the least receptive in the beginning, and although he eventually became somewhat enthusiastic about midwifery, his enthusiasm dwindled during the first year of the CNM program. A second CNM was added in the summer of 1971 *(1)*, about 6 months after the program began, but when the first CNM resigned in early 1972, she was not replaced. Conflicts which may arise from differences of personality or style are likely to be especially significant when numbers are small; such differences appeared to be operative in the case of the first CNM and, to a smaller degree, in the case of the pediatric nurse practitioner.

Professional identity was particularly strong in the first CNM, who, for example, refused to register under Oregon's new physician assistant law in 1971. She felt it would be something of a comedown from, and would unnecessarily complicate, the legal identity and protection she already enjoyed under the State nursing statutes. The second CNM took a similar position. Their unwillingness to be certified as PAs was a matter of expressed discomfort to the OB-GYN chief, who, in his bureaucratic role as protector of institutional interests, wished to take advantage of the new law's supposed reduction of institutional risk. In this instance it was the CNMs who, in effect, charted their course by professional norms rather than accommodate themselves to bureaucratic goals.

The formal training of the two CNMs greatly exceeds that of the PNP and the PAs. Both CNMs are nurses with baccalaureate degrees who had earned master's degrees, one in the Yale and the other in the Columbia University midwifery programs. The pediatric nurse practitioner was a non-baccalaureate RN in the Kaiser system who, under Kaiser sponsorship, completed 4 months of training at the Bunker Hill Health Center PNP Program, operated in collaboration with Massachusetts General Hospital. The PAs, most of them trained at Duke University, were former military

medical corpsmen; only one of them had a baccalaureate degree.

Unlike the PNP, the PAs and the CNMs were first encountered by Kaiser patients, physicians, nurses, administrators, and others as distinctive professionals in the distinctive roles they were employed to fill; the status they enjoyed had been achieved without help from Kaiser. It was to be expected, particularly of the CNMs, that they would have a sense of "turf": that they would identify with and feel committed to professional goals and norms clearly separate from, and to some extent potentially conflicting with, both the institutional bureaucracy of the health plan and the professional collectivity of the medical specialty departments. To the degree to which the conflict of loyalties made it more difficult for the health plan and departmental bureaucracies to command the new professionals, one might suppose that both the PA and the CNM programs, on that criterion alone, would have expanded more slowly than the PNP program.

Influence of gender. We speculate that gender may have been a significant determinant of the degree of success that has characterized the three programs. The PNP and CNMs are women; all PAs have been men until the first female PA was recruited in the fall of 1974. (To date, only a small percentage of the graduates of physician's assistant's programs have been women.) Virtually all the physicians in the three departments are male; there is one female internist, one female obstetrician-gynecologist, and one female pediatrician. Formal and informal surveys in the Kaiser system have indicated that for some patients of the obstetrics and gynecology department the CNM's gender is a distinct advantage, as it also is for some mothers of pediatrics department patients in their relations with the PNP.

As seems to be generally the case, the receptivity of patients to new professionals has been high at Kaiser, a reaction that has dissipated the fear expressed by some physicians that patients would not accept treatment from nonphysicians *(1,2)*. As part of Kaiser studies not yet released, nurses and pharmacists throughout the system, along with internists at the Vancouver clinic, were surveyed about patient receptivity to the PAs. All respondents indicated high patient receptivity to the new professionals. Moreover, the gender of the new professional appears to make little difference in patient reaction except as noted previously.

However, several of the physicians who had been openly skeptical about the new professionals, as a threat to the quality of care, expressed greater anxiety about the male PAs than about the female PNP and CNMs, because the women, having been socialized first as nurses, "know what the proper relationship between a physician and an assistant ought to be;" to wit, the nurse practitioners would have an inculcated "sense of their own limitations," in contrast to the PAs, who "may go off on their own in all directions" to the detriment of patient welfare. These and similar statements were made to or reported to the authors in informal conversation. It is perhaps significant that the first nurse practitioners, unlike the PAs, routinely sat with other nurses rather than at the special table reserved for physicians in the hospital cafeteria.

That the PAs were men may help, on the other hand, to explain the relative ease with which their institutional role was defined, and the breadth of the role, in the medical department. For, although the male physician may have been more comfortable with female auxiliaries, role concession was perhaps another matter. If he were to surrender a part of his heretofore almost exclusively held rank and privilege as a physician (as opposed to his higher role of internist), it may have been easier for the MD to share them with other men, thereby avoiding an implicit threat to his maleness.

Comparison of role strains. By far the most important factor in shaping the dissimilar experiences with new health professions, however, may have been the differential implication for the basic role distinctiveness of the three kinds of physician specialists. For that reason we now proceed to discuss comparative role strain at some length.

The PA can be viewed as helping to liberate the internist to assume the occupational role for which the internist has been trained; that is, to perform the definitive set of functions and discharge the definitive set of obligations of that role. The Kaiser internists, who practice adult nonsurgical general medicine, had long complained not merely about the size of their caseloads but also about the content of their practices. With no general practitioners in the department of medicine, internists had to combine two roles—primary physician and consultant-diagnostician; they treated colds, athlete's foot, and gonorrhea as well as the more complicated illnesses or conditions. The PAs, by taking over many minor cases, not only helped to lighten the caseloads but also began to free internists to pursue more intensively the diagnostic services and subspecialties which distinguish them from the GP. Thus, more of the internist's occupational behavior could be concentrated at the skill level at which normatively he expects, and is expected, to perform. And because, as role theory posits, the rewards for filling a social position follow from the duties and obligations of that position, the PA might be regarded as enhancing the reward potential of the internist's occupational and social position, to the extent that the PA helped to move the internist's role performance to a higher level.

In contrast, the CNM and the PNP posed something of a threat to the role, and therefore to the status or rewards, of physicians in their respective departments. Let us begin with the OB-GYN specialty, which is medial to internal medicine and surgery. The OB-GYN specialist is physician to adult women, whose differentiated medical care needs have been perceived as

primarily related to reproduction. In the gynecologic (as distinguished from the obstetrical) area a physician's assistant might establish essentially the same role relative to physicians that he occupies with internists or general surgeons; by performing routine pelvic examinations, taking Papanicolaou smears, and treating vaginitis, for example, he would release the gynecologist to function at the higher skill level which distinguishes him from the general practitioner. Both CNMs at Kaiser have performed routine gynecologic services, and the remaining CNM continues to do so. However, CNMs perceive their distinctive occupational role to be in obstetrics. Moreover, the CNM's training encompasses the whole maternity cycle—prenatal, delivery, and postnatal—thus paralleling rather than buttressing the obstetrician's specialty.

This scope of midwife responsibility was endorsed in a joint statement by the American College of Obstetricians and Gynecologists, the nurses association of that organization, and the American College of Nurse Midwives. The statement includes these clauses *(3)*:

> 1. The health team organized to provide maternity care will be directed by a qualified obstetrician-gynecologist. 2. In such medically-directed teams, qualified nurse midwives may assume responsibility for the complete care and management of uncomplicated maternity patients.

True, the nurse-midwife's competence is limited tc "normal pregnancies," but they constitute the majority of cases. The obstetrician's definitive specialty has been pregnancy, not abnormal pregnancy. If his specialty were redefined as abnormal pregnancy, the total number of obstetricians would have to be drastically reduced; but if pregnancy rather than abnormal pregnancy is his desired specialty, much of what he does can be duplicated by a CNM with a master's degree or less. A classic method of protecting the privileges of an occupational role has been to limit access to the role by raising the role credentials, which then tend to become the rationale for the privileges. To some extent, obstetricians face a potentially zero-sum situation threatened by midwife invasion of the valued role, with discomfiting implications for the eventual level of status or rewards, including job security, remuneration, and prestige.

At the beginning in 1971, the OB-GYN department at Kaiser defined the CNM functions to include management of normal pregnancy, from conception through postnatal followup, as well as prenatal classes, instruction in family planning, and treatment of minor gynecologic problems *(1)*. Six months after the program's inception a survey of the department's physicians by the chief disclosed general approval; indeed, 9 of 10 respondents answered yes to the question, "Would you like to see the midwife role expanded in the future?" Requested to "please list in which areas you would expand the role," seven of the nine physicians mentioned prenatal care; seven, labor and delivery; four, prenatal education; two, routine gynecology; and one, family planning.

Precisely what was meant by role expansion obviously was not made clear, however. One physician who cited labor and delivery specified "labor and delivery preparation," which is a far cry from delivery management. In answer to a subsequent question, "In which of the following areas do you feel nurse-midwives display the greatest competence?" only 3 of the 10 respondents marked delivery and labor in a checklist of five areas, whereas all 10 checked prenatal education, 7 prenatal care, 5 family planning, and 5 diagnosis and treatment of minor gynecologic conditions.

Neither of the CNMs had had intensive experience in delivery before coming to Kaiser. When the second CNM arrived, she was placed in the delivery room for several weeks before assuming a practice pattern similar to the first CNM's. Within a few months that pattern had changed substantially, with more time allotted to prenatal education and less time to the delivery room. Since 1972, the one remaining CNM has practiced at the Vancouver clinic, with one OB-GYN physician. She teaches no prenatal classes. She treats minor gynecologic problems, gives routine pelvic examinations, and takes Papanicolaou smears. She screens all newly pregnant women, retaining some of the uncomplicated cases for management during the prenatal period. However, she is isolated from labor and delivery—the climactic test of the obstetrical specialty—and thus has a sense of role truncation.

The traditional midwife, however inadequate, established her role long before obstetrics became a medical specialty. Thus, in an earlier era it was the physician who replaced her rather than the other way around; in fact, the obstetrician established his role largely in combat with and at the expense of midwifery. The psychological setting of recent paramedic innovations may therefore be somewhat different in obstetrics than in medicine or pediatrics, where the physician had no such established precursor.

Incidentally, nurse-midwifery may embody something of a role-invasion threat to physicians with respect not only to degree of substitutability but to dominance over the content of medical care as well. In general, modern nurse-midwives have tended to be more receptive than physicians to natural birth and other obstetrical techniques which permit the patient to play an active role in the delivery process. In prenatal classes taught by CNMs, not only the CNM's patients but the physician's patients may be exposed to the Lamaze technique, alternative anesthetics, husband-in-delivery-room, and similar possibilities as matters of patient choice—a perspective at odds with the traditional perception of the delivery room as run primarily for the busy physician's convenience, with the physician in full command of an essentially passive patient. Of course, on this and other issues discussed throughout the paper, there is substantial physician variation within all three specialties.

At Kaiser, the PNP's situation is more nearly comparable with the CNM's than with the PA's. The pediatrics specialty is not limited to sick children; rather it encompasses the whole area of child development—normal as well as abnormal—and the fully trained PNP's competence to manage well-baby development roughly resembles the CNM's competence to manage normal pregnancies. The Kaiser PNP handles telephone calls from mothers, gives going-home instructions for the newborn, and examines well babies on referral from the pediatricians. The usual arrangement has been for the physician to see babies at 1, 6, 12, and 24 months and the PNP at 2, 3, 4, 9, and 18 months.

In her first 6 months of service, 62 percent of the babies referred to the PNP came through 4 of the 14 pediatricians, although those 4 cared for only 33 percent of the newborns delivered at the Kaiser hospital. Another four pediatricians referred only 5 percent of the babies seen by the PNP, although their caseload was 28 percent of the newborns. Seventeen pediatricians answering a subsequent departmental questionnaire deemed the PNP competent to perform well-baby care, but seven thought that well-baby care by a physician was better. Even so, Kaiser pediatricians appeared to be more receptive to PNPs than were pediatricians in general at that time *(4)*.

Examining and monitoring the development of well babies are a large segment of the pediatrician's practice, and pediatricians have not been scarce. An expansion of the supply of providers, whether paramedic or MD, could seriously erode the advantaged market position which physicians in general so long have enjoyed. The current oversupply of college professors is an open text for all professions, and the physicians cannot have missed the additional instruction. Because PNPs, and especially CNMs, are surrogates for pediatricians and obstetricians to a degree that is not true of PAs and internists, there may be more of a tendency to arrange medical care delivery so that CNMs and PNPs, in contrast to PAs, do not acquire patients of their own. In obstetrics and pediatrics there may be a greater propensity to make a physician input (over and above general supervision) necessary at some interval in every case. That arrangement might be viewed as a method of physician role defense—as a means of preserving the noneconomic as well as the economic status flowing from the continued exclusive performance of at least one set of functions which define the desired higher role.

If the department of medicine had been staffed primarily by general practitioners rather than by internists, the setting with respect to PAs and physicians would have been similar to that of the nurse practitioners and physicians in pediatrics and OB-GYN. In fact, role friction has occurred in some of the PA-GP relationships in the emergency and walk-in clinics; for example, between PAs whose experience was greater than the GPs' in specific narrow areas such as minor surgery. We do not mean to suggest that role friction was nonexistent in the relations of PAs and internists; we posit merely that the net effect of the PA on the internist is likely to be role elevation, whereas the services of the PA may be role-threatening to the GP. *(1)*. However, the PA may be more threatening to noneconomic than to economic aspects of the GP's status because GPs have been in short supply.

The first PA was assigned to the Vancouver outpatient clinic partly because a more permissive State law was in the offing. *(2)*. In his 4 years of service, his practice pattern, within his range of competence, has resembled that of the internists. Under general physician supervision he has seen patients by appointment and has taken his share of walk-ins; he has acquired a small panel of patients who use him more or less regularly for routine outpatient care. A second PA, assigned to that clinic in the fall of 1972, practices similarly. Other PAs, practicing in the medical department in Oregon clinics, have been used primarily in walk-in and emergency services, with routine followups for specific illnesses; but in 1973, they collectively requested practice patterns more comparable with those of the Vancouver PAs, and the trend seems to be in that direction.

It is worth noting that the productivity of the first PA was high almost from the beginning. During the initial, crucial year, when he was the only PA, he achieved a daily rate of output, measured by number of patients seen, that compared favorably with physician productivity, and because his services were concentrated in one small clinic, his role-raising as well as his load-lightening contribution was soon observable by the five or six internists practicing there. (Record interviewed the clinic's internists in 1972 for another Kaiser study, not yet published.) The schedules of the nurse practitioners filled more slowly; moreover, the PNP and CNMs rotated among several clinics. From the physician's point of view, one disadvantage in hiring nonphysicians is that inpatient, on-call, and other services which the new professionals do not provide must be divided among fewer MDs. That drawback is offset to some extent if the physicians perceive the new professionals as reducing the physician's outpatient load; the offset is greater if the new professionals are viewed as helping physicians move toward their desired role.

Postscript

In sum, the differential in growth rate and in the manner of using PAs and nurse practitioners was difficult to explain in mid-1973, when the first version of this paper was written, without reference to the disparate implications which the PA and nurse-practitioner innovations held for the desired physician role. Other factors, such as differences in market conditions, personality, and sex, no doubt contributed to the results, but the single most important circumstance seemed at the time to have been the role-elevation im-

plication of the PAs as contrasted with the role-threatening implication of the nurse practitioners, especially the CNMs.

Have subsequent developments supported or eroded the role-challenge hypothesis? A review of the situation toward the end of 1974 provided more affirmation than negation. Although the PA program in medicine had leveled off, there was at least one PA in each of the four major outpatient clinics, and two PAs in the Vancouver clinic; moreover, it is anticipated that a PA will be hired to practice with internists in a fifth major clinic to be opened in 1975. Two PAs who resigned, one because of illness and the other to take a job outside the Kaiser system, were promptly replaced. Although the internists are not universally enthusiastic about the PA program, it seems to have become a regular, generally accepted part of the department of medicine. Moreover, PA practices have become more rather than less similar to those of physicians in that PAs appear to be handling more repeat visits than formerly and to be developing relationships in which some patients look to the PA as the primary provider within the PA's range of competence.

PA programs have developed also in surgery and orthopedics, and a first PA has been recruited for the pathology department. Urologists have made some attempt to recruit a PA with urology training. These specialties are similar to medicine in that there is a range of routine services, at the periphery rather than at the heart of the role-defining skill, which can be delegated to a "physician extender," thereby freeing the physician to concentrate his performance at the core of his specialty.

In pediatrics, the original PNP left the system, but the department has trained three nurse practitioners to assist physicians. These women, selected from Kaiser's RN staff, were given 4 months of intensive training, didactic and clinical, by MDs in the department, with the system bearing the costs of training and salary maintenance. Their primary duties are in the hospital nursery, where they give the discharge physicals and instruct new mothers, and in the well-baby clinics, where they give routine examinations alternatively with physicians in a schedule similar to that described earlier. Recently, the upper pediatric age was raised from 15 to 18 years, and the nurse practitioners have handled a substantial portion of the increased caseload related to birth control, venereal disease, and drug addiction.

On the whole, acceptance of the nurse practitioner program by pediatricians is reported to have risen sharply. It should be pointed out, however, that the practitioner's services are largely confined to phases of the child care cycle from which physicians are most likely to wish to be relieved. The skill levels of the nurse practitioners presently employed are less than the most skilled categories in some other systems, where practitioners tend to develop their own panel of patients and assume more responsibility for care of the normal, healthy child, within the general supervision of a physician.

In OB-GYN, the one remaining CNM continues to be employed in the reduced practice pattern described earlier. It is generally conceded that her training and skill are underutilized. At the end of 1974, the department decided to employ four nurse practitioners for duties substantially below the skill level of the CNM, to provide routine prenatal care; to make, after normal pregnancies, the 6-week postpartum check; and to give routine gynecologic services such as Papanicolaou smears, breast checks, pelvic examinations, and birth control counseling. One such practitioner has been hired, and three nurses selected from the department's staff will be sent to southern California in the spring of 1975, to take a 4-month training course jointly conducted by the University of Southern California and the Kaiser system in that region. Salaries will be maintained and tuition paid for the three nurses by the Portland Kaiser system, and the nurses will be given a 2-month practicum in the department on their return. The market for OB-GYN physicians has loosened substantially, and six OB-GYN specialists were added to the staff in 1973.

Thus developments within medicine, pediatrics, and OB-GYN since mid-1973 seem to support the role-challenge hypothesis. Even so, it should be stressed that the web of causation is too complex for more than refined conjecture. Moreover, we have attempted to describe the experience of only one institution, which may not be typical even of health maintenance organizations, let alone other kinds of delivery systems. Still further, the context within which physicians' attitudes toward new health professionals are formed may change over time, sometimes quite rapidly.

Our thesis is that physicians' attitudes are critical in determining the extent to which, and the manner in which, the new kinds of personnel will be used, and it is unfortunate that so little attention has been given to differential role impact as an explanation of physicians' attitudes in various medical specialties. We suggest that it might be fruitful to test the role-challenge hypothesis against the experience of other systems.

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