Effect of Ambulatory Utilization Review on Referrals from Generalists to Specialists

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We studied whether ambulatory utilization review (UR) alters how many patients internal medicine residents refer to subspecialists, and whether the effect persists without reinforcement. We compared referral rates of residents from a firm that held UR meetings (intervention firm residents, $n = 20$) with those of residents from a firm that did not (control firm residents, $n = 21$). We then compared referral rates of 17 intervention firm residents while they were participating in UR with their rates after not participating for at least 4 weeks. Intervention firm residents submitted 30% fewer referrals than control firm residents (9% vs 13%, $p = .05$). However, the effect was short-lived; after 4 weeks without UR, intervention firm resident referral rates were similar to control firm referral rates.

KEY WORDS: ambulatory utilization review; internal medicine residents; referral to subspecialists.

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Primary care providers refer 2% to 20% of their patients to subspecialists for advice and treatment.^{1,2} Referral rates vary even when there are no associated financial consequences,¹⁻³ and the variation cannot be explained by patient factors or practice characteristics.¹ Thus, physicians may have individual referral thresholds,⁴ and some patients may be referred unnecessarily.⁵⁻⁸

Consultations cost more than visits with primary care providers, as specialists order more laboratory and radiographic studies,⁹ and are paid more.¹⁰ Consequently, cost-containment efforts include mechanisms to reduce unindicated specialty referrals. One mechanism is ambulatory utilization review (UR), where referral requests are reviewed before authorization. Although it is widely used,¹¹ there is only one study showing that it can decrease referral rates, and possibly increase referral appropriateness.¹²

This study tests the hypotheses that participation in ambulatory UR raises the referral thresholds of internal medicine residents.

METHODS

Setting

We performed the study at an academic Veterans Administration (VA) Ambulatory Care Center where primary care is delivered through three firms, each of which functions as an independent, equivalent clinic. Patients, staff, and residents are randomly assigned to firms.

Internal medicine residents present most patients they see to attending physicians. Subspecialty referrals may be discussed, but this is not required. The VA does not limit referrals from primary care to subspecialists, and physicians do not take financial risk for patient care.

Intervention

More than a year before this study, we established weekly ambulatory UR meetings to consider nonurgent referral requests in one of the three firms, the intervention firm. Three attending physicians and rotating groups of seven to eight residents discussed the approximately 25 referral requests submitted the preceding week. The committee used group consensus to decide whether to authorize referral requests, and consulted texts, national and local guidelines, and local experts when participants disagreed. For 1 in 100 referral requests, this process failed to produce consensus, and the committee decided by straight majority vote.

We based the UR procedure on an informal survey of 12 groups in the Los Angeles area. Nine groups held weekly UR meetings, making most authorization decisions by group consensus and resolving disagreements by discussion and consultation with local subspecialists. Two groups occasionally consulted national guidelines, others either used local guidelines (three groups), or used none at all (four groups).

Design

We performed a randomized controlled trial comparing referral rates of internal medicine residents in the intervention firm with referral rates of residents in a firm that did not conduct UR meetings, the control firm. We then performed an experiment on the intervention firm to study whether participating in UR had a lasting effect on resident referral rates.

Data Collection

To obtain reliable estimates, we determined referral submission rates (referral submission rate equals number

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of referrals written per number of patients seen) only for residents who saw 20 or more patients during each study period. In the intervention firm, referrals were collected during UR meetings. In the control firm, clerks checking patients out of clinic kept copies of referrals. Clerks in both firms entered the identity of the provider seeing each patient into a computerized database, which we used to determine the number of patients seen by study residents. The system is 90% to 95% accurate.

Experiment 1: Intervention Firm Versus Control Firm Referral Submission Rates

We compared referral submission rates of intervention and control firm residents who saw at least 20 patients over 11 weeks. We performed an intention-to-treat analysis, including all patient visits that fell within these 11 weeks, whether or not intervention firm residents had previously attended UR meetings.

Experiment 2: Recent Versus Distant Participation, Intervention Firm

To determine whether UR participation has a lasting effect on behavior, we examined the referral rates of intervention firm residents who had been away from UR meetings for at least 4 weeks, the length of a resident rotation. Over a 20-week period, we compared referral rates of residents while they were attending meetings (recent participants) with their referral rates after being away from the process for at least 4 weeks (distant participants). For this study, we did not include patient visits that occurred before residents attended their first UR meeting.

Statistics

We analyzed the data with SPSS. We compared intervention and control firm resident characteristics with χ^2 tests. In experiment 1, we compared intervention and

control firm resident referral submission rates with Mann-Whitney U tests. In experiment 2, we compared recent and distant participant intervention firm resident referral submission rates using Wilcoxon Rank-Sum tests.

RESULTS

There were no demographic differences between intervention and control firm residents (Table 1).

Experiment 1

In the intervention firm, there were 1,526 patient visits to 20 residents. Five residents saw patients both before and after attending UR meetings; they saw 129 patients before their first meeting, and 339 patients 0.5 weeks after their last meeting. The other 15 intervention firm residents saw 1,058 patients an average of 4.9 weeks (95% confidence interval [CI] 2.5, 7.3) after their last UR meeting. In the control firm, there were 1,401 patient visits to 21 residents, none of whom had attended a UR meeting.

The average referral submission rate in the intervention firm was 9% (95% CI 7%, 12%), compared with an average referral submission rate of 13% (95% CI 10%, 15%) in the control firm ($p = .05$).

Experiment 2

Over 20 weeks, 17 intervention firm residents saw at least 20 patients as both recent and distant participants. As recent participants, residents saw 1,173 patients an average of 0.67 weeks (95% CI 0.60, 0.75) after attending a UR meeting. As distant participants, they saw 519 patients an average of 12.33 weeks (95% CI 9.89, 14.77) after their last UR meeting.

Referral submission rates were 7% (95% CI 6%, 8%) for recent participants, but rose to 12% (95% CI 9%, 16%) for distant participants ($p < .002$), an increase of 70%.

Table 1. Demographics of Control and Intervention Firm Residents Studied in Experiments 1 and 2

Variable	Control Firm, <i>n</i>		Intervention Firm, <i>n</i>		
	In Clinic (<i>n</i> = 26)	Studied in Experiment 1* (<i>n</i> = 21)	In Clinic (<i>n</i> = 29)	Studied in Experiment 1* (<i>n</i> = 20)	Studied in Experiment 2† (<i>n</i> = 17)
Male	16	15	17	11	7
Female	10	6	12	9	10
Postgraduate year					
1	11	9	11	8	8
2	8	7	9	6	5
3	7	5	9	6	4
Studied prior to participation in UR	—	—	—	5 (25%)	—

* Control and intervention firm residents were included in experiment 1 if they saw 20 or more patients during the 11-week study period.

† Intervention firm residents were included in experiment 2 if they saw 20 or more patients both within 4 weeks of attending a utilization review (UR) meeting (recent participants), and after at least 4 weeks without UR (distant participants), during the 20-week study period.

The referral submission rate of intervention firm residents in the distant participant phase was similar to the referral submission rate of control firm residents who never attended UR meetings.

DISCUSSION

Residents in the firm that held UR meetings submitted somewhat fewer referral requests than residents in the firm that did not review referrals, but the effect fell short of statistical significance. Among the group of residents exposed to UR, referral rates were low only while residents were actively attending meetings, but were as high as those of their unexposed peers when they were not participating in the process.

The study has several limitations. First, although residents were unaware of this study, they were not blinded. Intervention firm residents knew that the referral process was under scrutiny from their participation in UR, and this may have led them to submit fewer referral requests. Second, we performed this study with residents from a single training program seeing patients in a single site, so the findings may not be generalizable to other training programs, or to nonresidency practices. Our results, however, correspond to the effect of ambulatory UR in a family medicine resident clinic, which decreased referral submission rate by 25%.¹²

This study suggests that ambulatory UR as conducted by a number of physician groups in the Los Angeles area may have an impact on referrals from generalists to specialists. Utilization review experience does not permanently change physicians' referral behavior, however; it is effective only as long as it is continued. Studies of other interventions to reduce physician use of medical resources, including feedback on test charges to reduce test ordering, also found that the interventions ceased to work soon after they were discontinued.¹³

A larger question than whether UR decreases referral rates, however, is whether it leads to more cost-effective care. There is little agreement on when patients should be referred from primary to specialty care,⁸ and there is evidence for both underutilization^{3,14} and overutilization^{3,6,7} of specialty services. The enormous variation in physician referral rates is problematic, and UR may be one mecha-

nism to reduce the variation. However, it is important that UR not be used to simply reduce referral numbers, without regard to health care quality. Hence, we need validated guidelines on when to refer, and UR decisions need to be based on this evidence.¹⁵

REFERENCES

1. Wilkin D, Smith A. Explaining variation in general practitioner referrals to hospital. *Fam Pract*. 1987;4:160-9.
2. Calman NS, Hyman RB, Licht W. Variability in consultation rates and practitioner level of diagnostic certainty. *J Fam Pract*. 1992;35(1):31-8.
3. Fertig A, Roland M, King H, Moore T. Understanding variation in rates of referral among general practitioners: are inappropriate referrals important and would guidelines help to reduce rates? *BMJ*. 1993;307:1467-70.
4. Cummins RO, Jarman B, White PM. Do general practitioners have different "referral thresholds"? *BMJ*. 1981;282:1037-9.
5. Donohoe MT, Kravitz RL, Chandra R, Chen A, Humphries N. Reasons for and avoidability of referrals from generalists to specialists. *J Gen Intern Med*. 1996;11(suppl):68.
6. Elwyn JG, Stott NCH. Avoidable referrals? Analysis of 170 consecutive referrals to secondary care. *BMJ*. 1994;309:576-8.
7. Emmanuel J, Walter N. Referrals from general practice to hospital outpatient departments: a strategy for improvement. *BMJ*. 1989;299:722-4.
8. Grace JF, Armstrong D. Referral to hospital: perceptions of patients, general practitioners and consultants about necessity and suitability of referral. *Fam Pract*. 1987;4:170-5.
9. Greenfield S, Nelson EC, Zubkoff M, et al. Variations in resource utilization among medical specialties and systems of care. *JAMA*. 1992;267:1624-30.
10. Ginsburg PB, LeRoy LB, Hammons FT. Medicare physician payment reform. *Health Aff. (Millwood)*. 1990;9:178-88.
11. Kerr EA, Mittman BS, Hays RD, Siu AL, Leake B, Brook RH. Managed care and capitation in California: how do physicians at financial risk control their own utilization? *Ann Intern Med*. 1995;123:500-4.
12. Chao J, Galazka S, Stange K, Fedirko T. A prospective review system of nonurgent consultation requests in a Family Medicine residency practice. *Fam Med*. 1993;25:570-5.
13. Tierney WM, Miller ME, McDonald CJ. The effect on test ordering of informing physicians of the charges for outpatient diagnostic tests. *N Engl J Med*. 1990;322:1499-1504.
14. Reynolds GA, Chitnis JG, Roland MO. General practitioner outpatient referrals: do good doctors refer more patients to hospital? *BMJ*. 1991;302:1250-2.
15. Haines A, Armstrong D. Developing referral guidelines. In: Roland M, Coulter A, eds. *Hospital Referrals*. Oxford, England: Oxford University Press;1992:163-78.