Impact of Gowning on Visit Length and Physical Examinations

David A. Nardone, MD, Kenneth E. James, PhD, D. Leah Finck

We evaluated the effect of a randomized trial of gowning on length of visit and number of physical examinations performed in an outpatient clinic. Nineteen senior internal medicine trainees saw 110 patients without gowns and 113 patients with gowns. Patients without gowns were with the trainees 25.2 ± 11.9 (mean $\pm$ SD) minutes versus 24.2 ± 10.3 minutes for gowned patients ($p = .51$). Ungowned patients were in the examination room a total of 38.5 ± 15.9 minutes versus 42.9 ± 17.6 minutes for gowned patients ($p = .06$). The number of patients that underwent physical examinations was the same (89) for gowned and ungowned groups, and the distribution of the number of examinations by patient group differed only slightly ($p = .88$). Gowning did not significantly decrease the length of visit or increase the number of physical examinations performed.

KEY WORDS: general medicine clinic; gowning; internal medicine trainees or residents; physical examination; visit lengths.

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The emphasis on decreased lengths of inpatient stay, increased delivery of primary care, increased requirements to document the content of the visit for billing and accreditation purposes, and expanded primary care training have led to a major increase in patient activity in the ambulatory care setting at teaching institutions. Our trainees proposed to clinic administration that asking patients to put on gowns would reduce visit times and permit the trainees to be more efficient in their practices. The purpose of this study was to demonstrate whether gowning would result in shorter visits and whether it served as a cue that prompted trainees to perform more physical examinations.

METHODS

Nineteen senior internal medicine trainees (postgraduate year 2 and above) who had a weekly clinic during the 1992-93 academic year participated in the study. One of the 19 was a fellow, and 6 were women. The trainees were not informed about the study in advance. Patients were

randomized to gown and no-gown groups, equally balanced, in most circumstances, by intervention and order of intervention within trainees.

The clinic nurse asked patients randomized to the gown intervention group to remove their clothing, shoes, and socks, and put on a gown. At the conclusion of each visit, the nurse determined if there was a "used" gown or sheet as the room was prepared for the next patient. A research assistant, located in a central corridor, recorded the total length of time the patient was in the examination room and the time the trainee physician was in the room with the patient.

We reviewed charts and recorded which of eight physical examinations were performed: skin, breast, heart, lung, abdominal, genital, rectal, and prostate. The two-sample Student's *t* test was used to compare the time with trainee and total visit time between the two groups. Ninety-five percent confidence intervals were constructed for the differences between groups in time with trainee and total visit time. The two-sample trend test was used to compare the number of examinations performed.

RESULTS

Two-hundred twenty-three patients (5 women and 218 men) were evaluated during the study period. One-hundred ten were randomized to the no-gown group and 113 to the gown group. Patients in the two groups were comparable by age (64.0 years) and mean number of visits in the previous year (1.8). The latter is a rough indicator of illness severity.

The length of times the patients were with the trainees and the total time spent in the examination room are summarized in Table 1. Mean time spent with the trainee was very close for the no-gown and gown groups ($p = .51$). Mean total time ($\pm$ SD) for the no-gown group was 38.5 ± 15.9 minutes versus 42.9 ± 17.6 minutes for the gown group ($p = .06$). This difference was attributed to the longer time gowned patients were alone in the examination room. The no-gown group mean was 13.4 minutes, and the gown group mean was 18.7 minutes. The number of patients who underwent examinations was the same (89) for the two groups, and the distribution of the examinations differed only slightly (Table 2) ($p = .88$). The latter was also true for each of the eight specific examinations (data not shown).

DISCUSSION

Only a few reports have focused on interventions to decrease patient visit length. Meislin et al. observed that a registered nurse coordinator in a teaching hospital emergency

Received from the Ambulatory Care Program, Health Services Research and Development Program, VHA Medical Center; and the Division of General Medicine, Department of Medicine, and Department of Public Health & Preventive Medicine, Oregon Health Sciences University, Portland.

Address correspondence and reprint requests to Dr. Nardone: Ambulatory Care (11cp), P.O. Box 1034, 3710 SW U.S. Veterans Hospital Rd., Portland, OR 97207.

Table 1. Time Spent in Examination Room

	Time with Resident, Minutes			Total Time, Minutes		
	No-Gown (n = 110)	Gown (n = 113)	Difference* (95% CI)	No-Gown (n = 110)	Gown (n = 113)	Difference† (95% CI)
Mean ± SD	25.2 ± 11.9	24.2 ± 10.3	1.0	38.5 ± 15.9	42.9 ± 17.6	-4.3
Range	4-68	4-55	(-1.9, 3.9)	8-101	13-98	(-8.7, 0.1)

**p* = .51 for the comparison between no-gown and gown groups.

†*p* = .06 for the comparison between no-gown and gown groups.

department could reduce the length of the visit substantially.¹ The average turnaround time for five common entities with the fast-track method decreased from 161 to 94 minutes. Camasso and Camasso, reporting on physician productivity, found that clinician style determined visit length.² Those who averaged four visits per hour were more likely to rely on nurses to deliver services and to request more frequent visits at shorter intervals.

In their 1987 report, Kosecoff et al. found that follow-up patients spent on average 21 to 24 minutes with their resident provider.³ Smith and colleagues in 1995 found the mean time resident physicians at a Department of Veterans Affairs clinic spent directly with their patients was 19.8 minutes.⁴ The visit lengths in our study were very similar at 24.7 minutes.

We did not find that gowning patients reduced visit time as expected. The time our trainees spent with their patients was virtually the same in both the ungowned and gowned groups, whereas total time in the examination room was less for those not gowned. The explanation for longer visit lengths among gowned patients is not readily apparent. Perhaps an older population (average age 64 years) spends more time undressing, gowning, and redressing.

The lack of effect of gowning on the number of physical examinations performed may reflect preferences or comfort in a predominantly male population of patients and providers. However, in a recent study the frequency of breast, genital, and rectal examinations performed by internal medicine trainees in an outpatient setting was not felt to be determined by gender congruence, but rather by expectations and priorities of the training pro-

gram.⁵ In our view, it is likely our internal medicine trainees were driven to perform physical examinations by the patient's underlying medical problems, presenting complaints, the need to address health promotion priorities, and type of visit (new vs follow-up).

Despite the lack of effect of gowning on length of visits, our findings may be useful in deciding how much time to plan for scheduled visits with trainees and how much space to allocate for their practices. In addition, the time the patient is in the examination room alone may be used for visits by nurses, dietitians, or social workers. As we move into a system of managed care, there clearly are other members of the team who can assist in promoting health, preventing disease, and educating patients regarding healthy lifestyles.⁶

We recognize the preliminary nature of this investigation. Future studies are indicated to determine when and why patients are in the examination rooms alone for long periods of time and their overall satisfaction with the outpatient visit process. It would be valuable to delineate reasons that physicians do or do not ask patients to gown and reasons patients may or may not wish to comply. It would be helpful to assess the role of the attending physician on the length of the visit. Finally, a similar study in a population with a higher percentage of women might be conducted to determine the effect of physician and patient gender on preferences for gowning.

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Table 2. Number (%) of Patients Undergoing Physical Examinations*

Number of Examinations	No-Gown Group, n (%)	Gown Group, n (%)
0	21 (19.1)	24 (21.2)
1	2 (1.8)	5 (4.4)
2	34 (30.9)	33 (29.2)
3	44 (40.0)	27 (32.7)
4	4 (3.6)	3 (2.7)
5	4 (3.6)	8 (7.1)
6	1 (0.9)	1 (0.9)
7	0 (0.0)	2 (1.8)

**p* = .88 for the comparison between no-gown and gown groups.