

ORIGINAL RESEARCH

The Impact of Facecards on Patients' Knowledge, Satisfaction, Trust, and Agreement With Hospital Physicians: A Pilot Study

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BACKGROUND: Simple interventions such as facecards can improve patients' knowledge of names and roles of hospital physicians, but the effect on other aspects of the patient-physician relationship is not clear.

OBJECTIVE: To pilot an intervention to improve familiarity with physicians and assess its potential to improve patients' satisfaction, trust, and agreement with physicians.

DESIGN: Cluster randomized controlled trial assessing the impact of physician facecards. Physician facecards included pictures of physicians and descriptions of their roles. We performed structured interviews of randomly selected patients to assess outcomes.

SETTING: One of 2 similar hospitalist units and 1 of 2 teaching-service units in a large teaching hospital were randomly selected to implement the intervention.

MEASUREMENTS: Satisfaction with physician communication and overall hospital care was assessed using the Hospital Consumer Assessment of Healthcare Providers and

Systems. Trust and agreement were each assessed through instruments used in prior research.

RESULTS: Overall, 138 patients completed interviews, with no differences in age, sex, or race between those receiving facecards and those not. More patients who received facecards correctly identified ≥ 1 hospital physician (89.1% vs 51.1%; $P < 0.01$) and their role (67.4% vs 16.3%; $P < 0.01$) than patients who had not received facecards. Patients had high baseline levels of satisfaction, trust, and agreement with hospital physicians, and we found no significant differences with the use of facecards.

CONCLUSIONS: Physician facecards improved patients' knowledge of the names and roles of hospital physicians. Larger studies are needed to assess the impact on satisfaction, trust, and agreement with physicians. *Journal of Hospital Medicine* 2014;9:137-141. © 2013 Society of Hospital Medicine

The patient-physician relationship is fundamental to safe and effective care. Hospital settings present unique challenges to this partnership, including the lack of a prior relationship for hospital-based physicians, rapid pace of clinical care, and dynamic nature of inpatient medical teams. Prior studies document that a majority of hospitalized patients are unable to correctly identify their physicians or nurses, and patients in teaching hospitals have difficulty understanding their physicians' level of training.¹⁻⁴ Acknowledging these deficits, professional societies and the Accreditation Council for Graduate Medical Education (ACMGE) have issued policies stating that patients and caregivers need to know who is responsible at every point during patient care.^{5,6} These policies do not, however, make recommendations on methods to achieve better understanding.

Simple interventions improve patients' ability to correctly identify the names and roles of their hospital physicians. Maniaci and colleagues found that patients were better able to identify attending physicians when their names were written on the dry-erase board in the room.⁷ Arora and colleagues asked hospital physicians to give facecards, which included their picture and a description of their role, to patients.⁸ Patients were more likely to correctly identify ≥ 1 physicians, but, surprisingly, less likely to understand physicians' roles. In a similar study, Francis and colleagues placed photographs with names of the attending and resident physicians on the wall in patient rooms.⁹ Patients who had photographs of their physicians on the wall were more likely to correctly identify physicians on their team compared with patients who had no photographs. Additionally, patients who were able to identify more physicians rated satisfaction with physicians higher in 2 of 6 survey questions used. However, the study was limited by the use of a nonvalidated instrument to assess patient satisfaction and the use of an intermediate outcome (ie, ability to identify physicians) as the independent variable rather than the intervention itself (ie, physician photographs).

Beyond satisfaction, lack of familiarity may negatively impact patients' trust and agreement with hospital physicians. Trust and agreement are important

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Additional Supporting Information may be found in the online version of this article.

Received: August 12, 2013; Revised: September 27, 2013; Accepted: September 30, 2013

2013 Society of Hospital Medicine DOI 10.1002/jhm.2100

Published online in Wiley Online Library (Wileyonlinelibrary.com).

predictors of adherence to recommended treatment in outpatient settings¹⁰⁻¹⁸ but have not been adequately evaluated in hospital settings. Therefore, we sought to pilot the use of physician facecards and assess their potential impact on patients' knowledge of physicians' names and roles as well as patient satisfaction, trust, and agreement with physicians.

METHODS

Setting and Study Design

We performed a cluster randomized controlled trial at Northwestern Memorial Hospital (NMH), an 897-bed tertiary-care teaching hospital in Chicago, Illinois. One of 2 similar hospitalist service units and 1 of 2 similar teaching-service units were randomly selected to implement the use of physician facecards. General medical patients were admitted to the study units by NMH bed-assignment personnel subject to unit bed availability. No other criteria (eg, diagnosis, severity of illness, or source of patient admission) were used in patient assignment. Each unit consisted of 30 beds, with the exception of 1 hospitalist unit, which had 23. As a result of a prior intervention, physicians were localized to care for patients on specific units.¹⁹ Hospitalist units were each staffed by hospitalists who worked in 7-day rotations without the assistance of residents or midlevel providers. Teaching units were staffed by physician teams consisting of 1 attending, 1 senior resident, 1 intern, and 1 or 2 third-year medical students. No fourth-year students (ie, acting interns) rotated on these services during the study period. Housestaff worked in 4-week rotations, and attending physicians on the teaching service worked in 2-week rotations.

Patient rooms included a whiteboard facing the patient with a template prompting insertion of physician name(s). Nurses had the primary responsibility for completing information on the whiteboards.

Physician Facecard

We created draft physician facecards featuring pictures of physicians and descriptions of their roles. We used Lexile analysis, a widely used measure of reading difficulty, to improve readability in an iterative fashion.^{20,21} We then sought feedback at hospitalist and resident meetings. Specifically, we asked for suggested revisions to content and recommendations on reliable methods to deliver facecards to patients. Teaching physicians felt strongly that each team member should be listed and shown on 1 card, which would fit easily into a lab-coat pocket. We similarly engaged the NMH Patient and Family Advisory Council to seek recommended revisions to content and delivery of the facecards. The Council consists of 18 patient and caregiver members who meet regularly to provide input on hospital programs and proposals. Council members felt strongly that physicians should deliver the cards themselves during their initial introduction,



General Medicine Teaching Service

These are the doctors on your hospital care team. They will work with nurses and other doctors, including your primary care doctor and specialist doctors, to care for you.

	Attending Doctor Dr. Marianne Green The attending doctor is in charge of your overall care
	Resident Doctor Dr. Rachel Issaka The resident doctor is supervised by the attending doctor
	Intern Doctor Dr. Christine Heumann The intern doctor is supervised by the attending and resident doctors

FIG. 1. Facecard example. Physicians shown gave permission to have their photographs and information displayed.

rather than having patients receive cards by other means (eg, as part of unit orientation materials delivered by nonphysician staff members). We incorporated feedback from these stakeholder groups into a final version of the physician facecard and method for delivery (Figure 1).

We implemented the use of facecards from May to June 2012. Physicians on intervention units were informed of the study via email, and one of the co-investigators (T.C.) distributed a supply of facecards to these physicians at the start of each rotation. This distribution was performed in person, and physicians were instructed to provide a facecard to each new patient during their first encounter. We also placed facecards in easily visible cardholders at the nurses' station on intervention units. Reminder emails were sent once each week to reinforce physician delivery of facecards.

Data Collection and Measures

Each weekday during the study period, we randomly selected patients for structured interviews in the afternoon of their second or third hospital day. We did not conduct interviews on the first day of physicians' rotations and excluded patients whose preferred language was not English and those disoriented to person, place, or time.

Patients were asked to name the physician(s) primarily responsible for their hospital care and to state

the role of each physician they identified. We documented receipt of facecards if one was viewed during the interview and by asking patients if they had received one. We also documented whether ≥ 1 correct physician names were written on the whiteboard in the patients' rooms. We used questions from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey to assess satisfaction with physician communication and overall hospital care. HCAHPS is a validated patient-satisfaction survey developed by the Agency for Healthcare Research and Quality (AHRQ) to assess hospitalized patients' experiences with care. Physician-communication questions used ordinal response options of never, sometimes, usually, and always. Overall hospital rating was assessed using a 0–10 scale with 0 = worst hospital possible and 10 = best hospital possible. Trust with physicians was assessed using the Wake Forest University Trust Scale.²² Prior research using this instrument has shown an association between trust and self-management behaviors.²³ This 10-item scale uses a 5-point Likert scale and generates scores ranging from 10 to 50. Agreement with physicians was assessed using 3 questions used in a prior study by Staiger and colleagues showing an association between levels of agreement and health outcomes among outpatients treated for back pain.¹⁷ Specifically, we asked patients to rate their agreement with hospital physicians' (1) explanation for the cause of primary symptoms, (2) plan for diagnostic tests, and (3) suggested plan for treatment using a 5-point Likert scale. The agreement scale generated scores ranging from 3 to 15.

Approval for the study was obtained from the institutional review board of Northwestern University.

Statistical Analysis

Patient demographic data were obtained from the electronic health record and complemented data from interviews. We used χ^2 and *t* tests to compare patient characteristics. We used χ^2 tests to compare the percentage of patients able to correctly identify ≥ 1 of their physicians and ≥ 1 of their physicians' roles. We used χ^2 tests to compare the percentage of patients giving top-box ratings to all 3 physician-communication-satisfaction questions (ie, "always") and giving an overall hospital rating of 9 or 10. We used top-box comparisons, rather than comparison of mean or median scores, because patient-satisfaction data are typically highly skewed toward favorable responses. This approach is consistent with prior HCAHPS research.^{24,25} We used Mann-Whitney *U* tests to compare ratings of trust and agreement. Because delivery of facecards was imperfect, we performed analyses both by intention to treat (ie, intervention vs control units) and based on treatment received (ie, received a facecard vs did not receive a

TABLE 1. Characteristics of Study Participants

Characteristic	Control Group, N = 72	Intervention Group, N = 66	P Value
Mean age, years (SD)	56.8 (18.0)	55.2 (18.2)	0.62
Women, n (%)	35 (48.6)	28 (42.4)	0.47
Nonwhite race, n (%)	35 (50.7)	36 (57.1)	0.46
Teaching unit, n (%)	34 (47.2)	36 (54.6)	0.39
Correct physician name on whiteboard, n (%)*	46 (76.7)	37 (72.6)	0.62
Received a facecard, n (%)	1 (1)	45 (68.2)	<0.01

NOTE: Abbreviations: SD, standard deviation.

*N = 60 for control group and N = 51 for intervention group due to missing data.

TABLE 2. Facecard Impact on Patients' Knowledge of Physician Name and Role

Impact	Control Group, N = 72, n (%)	Intervention Group, N = 66, n (%)	P Value
Patient correctly named ≥ 1 hospital physician	42 (58.3)	46 (69.7)	0.17
Patient correctly named role of hospital physician	12 (16.7)	34 (51.5)	<0.01

	Did Not Receive Facecard, N = 92	Received Facecard, N = 46	P Value
Patient correctly named ≥ 1 hospital physician	47 (51.1)	41 (89.1)	<0.01
Patient correctly named role of hospital physician	15 (16.3)	31 (67.4)	<0.01

facecard). All analyses were conducted using Stata version 11.2 (StataCorp, College Station, TX).

RESULTS

Study Subjects and Facecard Receipt

Overall, 217 patients were approached for interview. Thirty-six were excluded because of disorientation, 12 were excluded because their preferred language was not English, and 31 declined to participate in the study. Patient characteristics for the 138 study patients are shown in Table 1. There were no significant differences in patient age, sex, or race. There was no significant difference in the percentage of patients with ≥ 1 correct physicians listed on the whiteboard in the room. Delivery of facecards was incomplete, with only 68% of intervention-unit patients confirmed as having received them. A higher percentage of patients on the hospitalist intervention unit received facecards (23 of 30; 76.7%) than on the teaching intervention unit (22 of 36; 61.1%), but the difference was not statistically significant ($P = 0.18$). There were no significant differences in age, sex, or race between patients who received a facecard compared with those who did not.

Patients' Knowledge of Physicians

As shown in Table 2, more patients in the intervention group were able to correctly identify ≥ 1 of their treating physicians compared with the control group, but

TABLE 3. Facecard Impact on Patients' Ratings of Satisfaction, Trust, and Agreement

Ratings	Control Group, N = 72	Intervention Group, N = 66	P Value
Satisfaction with physicians, n (%) [*]	39 (54.2)	42 (63.6)	0.26
Overall hospital satisfaction, n (%) [†]	51 (70.8)	46 (70.8)	0.99
Median trust (IQR) [‡]	42 (37–47)	41 (37–46)	0.81
Median agreement (IQR) [‡]	12 (11–15)	12 (12–15)	0.72

	Did Not Receive Facecard, N = 92	Received Facecard, N = 46	P Value
Satisfaction with physicians, n (%) [*]	51 (55.4)	30 (65.2)	0.27
Overall hospital satisfaction, n (%) [†]	64 (69.6)	33 (73.3)	0.65
Median trust (IQR) [‡]	41 (35–47)	42 (38–47)	0.32
Median agreement (IQR) [‡]	12 (11–14.5)	12.5 (12–15)	0.37

NOTE: Abbreviations: IQR, interquartile range.

^{*}Data represent the number and percentage of patients giving highest rating (top box) for all 3 physician-communication satisfaction items.

[†]Data represent the number and percentage of patients giving overall hospital rating of 9 or 10 using a 0–10 scale with 0 = worst hospital possible and 10 = best hospital possible. For intervention group, N = 65 and N = 45 for received facecard because of missing data.

[‡]Score range for trust was 5–50; score range for agreement was 3–15.

the result was not statistically significant (69.7% vs 58.3%; $P = 0.17$). A significantly larger percentage of patients in the intervention group were able to identify the role of their hospital physicians (51.5% vs 16.7%; $P < 0.01$). When comparing those that received a facecard and those that did not, patients who were given a facecard were more likely to correctly identify their hospital physician (89.1% vs 51.1%; $P < 0.01$). Similarly, patients who had received a facecard were more likely to correctly identify the role of their hospital physician than patients who had not received a facecard (67.4% vs 16.3%; $P < 0.01$).

Levels of Satisfaction, Trust, and Agreement

Overall, patients had high levels of satisfaction, trust, and agreement with hospital physicians. The overall satisfaction with physician communication was 75.6% (mean of top-box scores across all 3 items), and 81 of 138 (58.7%) patients gave top-box ratings to all 3 physician-communication-satisfaction items. Ninety-seven of 137 (70.8%) patients rated overall hospital care as 9 or 10. The mean trust score for all patients was 40.7 ± 7.8 and the median was 41.5 (interquartile range, 37–47). The mean agreement score for all patients was 12.4 ± 2.4 and the median was 12 (interquartile range, 11–15). As shown in Table 3, satisfaction, trust, and agreement were similar for patients in the intervention group compared with the control group. Patients who received a facecard rated satisfaction, trust, and agreement slightly higher compared with those who had not received a facecard, but the results were not statistically significant.

DISCUSSION

We found that receipt of physician facecards significantly improved patients' knowledge of the names

and roles of hospital physicians but had little to no impact on satisfaction, trust, or agreement with physicians. Our finding of improved knowledge of the names and roles of physician providers is consistent with prior studies using similar interventions.^{7–9} Facecards may have prompted more effective introductions on the part of physicians and may have served as memory aids for patients to better retain information about their newly introduced hospital physicians.

Patient receipt of the facecard on intervention units was incomplete in our study. Despite engagement of physicians in designing cards that could easily fit into lab coats and a robust strategy to inform and motivate physician delivery of facecards, only 68% of intended patients received them. Although not explicitly reported, prior studies appear to have similarly struggled to deliver interventions consistently. Arora and colleagues reported that facecards were visible in only 59% of patients' rooms among those able to correctly identify ≥ 1 of their physicians.⁸ A post hoc survey of physicians involved in our study revealed the biggest impediment to delivering facecards was simply forgetting to do so (data not shown). Technologic innovations may help by automating the identification of providers. For example, the University of Pittsburgh Medical Center has piloted "smart rooms" that use sensor technology to announce the name and role of providers as they enter patients' rooms.²⁶

We hypothesized that facecards might improve other important aspects of the patient-physicians relationship. Although levels of patient satisfaction were slightly higher in patients who had received facecards, the results were not statistically significant. Levels of trust and agreement were minimally higher in patients who received facecards, and the results were not statistically significant. Notably, baseline levels of trust and agreement were higher than we had expected. In fact, levels of trust were nearly identical to those seen in a prior study of outpatients who had been with the same physician for a median of 4 years.²² Patients in our study may have had high levels of trust in the hospital and transferred this trust to their assigned physicians as representatives of the organization. The high level of agreement may relate to patients' tendency to prefer a more passive role as they encounter serious illness.^{27,28} Paradoxically, these findings may impede optimal patient care. The high levels of trust and agreement in the current study suggest that patients may not question their physicians to clarify plans and the rationale behind them. Prior research has shown that deficits in patients' comprehension of the care plan are often not apparent to patients or their physicians.^{4,29,30}

Our study has several limitations. First, we assessed an intervention involving 4 units in a single hospital. Generalizability may be limited, as physician-staffing models, hospitals, and the patients they serve vary. Second, as previously mentioned, patients in the

intervention group did not receive physician facecards as consistently as intended. We conducted analyses based on treatment received in an effort to evaluate the impact of facecards if optimally delivered. Third, questions assessing satisfaction, trust, and agreement did not specifically ask patients to reflect on care provided by the primary physician team. It is possible that interactions with other physicians (ie, consultants) may have influenced these results. Fourth, we were underpowered to detect statistically significant improvements in satisfaction, trust, or agreement resulting from our intervention. Assuming the intervention might truly improve satisfaction with physicians from 54.2% to 63.6%, we would have needed ≥ 900 patients (ie, 450 each for the intervention and control groups) to have 80% power to detect a statistically significant difference. However, our results show that patients have high levels of trust and agreement with hospital physicians despite the relative lack of familiarity. Therefore, any existing deficits in hospitalized patients' comprehension of the care plan do not appear to be exacerbated by a lack of trust and/or agreement with treating physicians.

CONCLUSION

In summary, we found that physician facecards significantly improved patients' knowledge of the names and roles of hospital physicians but had little to no impact on satisfaction, trust, or agreement with physicians. Baseline levels of satisfaction, trust, and agreement were high, suggesting lack of familiarity with hospital physicians does not impede these important aspects of the patient-physician relationship. Larger studies are needed to definitively assess the impact of facecards on satisfaction, trust, and agreement with physicians.

Acknowledgments

The authors express their gratitude to members of the NMH Patient and Family Advisory Council for providing input on the design of the physician facecard.

Disclosures: This study was supported by a grant from the Globe Foundation. The authors report no conflicts of interest.

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