

Costs and Benefits of Providing In-Person Professional Medical Interpreters in the Emergency Department: Results of a Randomized Controlled Study

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Research Objectives

Background:

- More than 24 million U.S. residents are limited English proficient (LEP).
- Trained medical interpreters mitigate language barriers between LEP patients and their providers.
- Federal law requires federally funded entities to provide language services to LEP patients.
- However, few hospitals receive direct reimbursement for language services.

Research Question:

Is there a business case for funding language services in hospital emergency departments (EDs)?

Study Goal:

Determine whether the use of in-person professional interpreters could introduce sufficient cost offsets to justify the financial investment in professionally trained medical interpreters.

Study Setting

EDs of two central New Jersey hospitals

Inclusion Criteria:

- All LEP Spanish-speaking adults
- LEP parents of patients ages 17 or younger

Exclusion Criteria:

- Cognitively impaired, comatose, or traumatized patients unable to provide informed consent
- Patients in police custody
- Hospital employees (when seen in the ED as patients)

Randomized Controlled Study Design

Randomized 4- to 6-hour time blocks when hospitals did not provide in-person interpreters

- Control time blocks: language services from the ED's usual sources (telephonic and ad hoc interpreters)
- Treatment time blocks: language services from in-person professionally trained medical interpreters

Study was powered for minimum detectable effects of about 0.3 of a standard deviation

Interpreter Qualifications:

- Certified bilingual in Spanish and English
- At least 40 hours of training: medical terminology, ethics, patient privacy, and basic interpreting skills
- Online course in the protection of human subjects

Data Sources:

- Satisfaction surveys use measures of patients, triage and discharge nurses, and attending physicians
- Health care service use and costs obtained from hospitals' billing records

Data collected from October 2008 through April 2009

Protocol approved by an independent institutional review board (IRB) and the hospitals' IRBs

Principal Findings

Table 1. Patient-Reported Interpreter Services Received, by Treatment Group

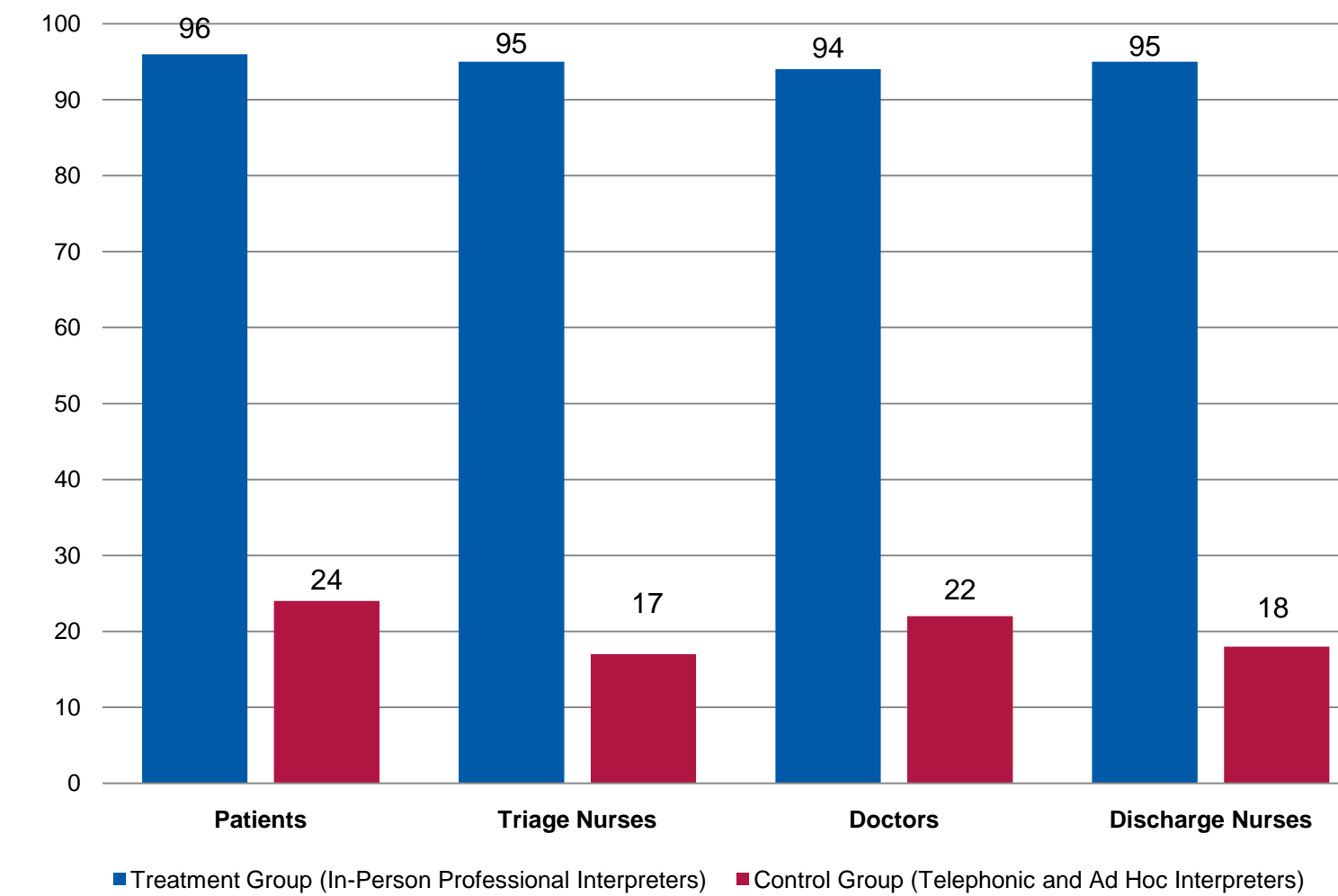
| Interpretation Method Reported by Patient | Treatment Group (n = 231) | | Control Group (n = 193) | |
|--|------------------------------|------------|----------------------------|------------|
| | Count | Percentage | Count | Percentage |
| In-Person interpreter—provided by hospital | 227 | (98.3) | 11 | (5.7) |
| Family member/friend interpreted for me | 4 | (1.7) | 47 | (24.4) |
| Interpreter on phone—provided by hospital | 1 | (0.4) | 23 | (11.9) |
| Doctor/Nurse spoke my language | 11 | (4.8) | 43 | (22.3) |
| Other | 1 | (0.4) | 12 | (6.2) |
| Not applicable (Did not receive services) | 1 | (0.4) | 66 | (34.2) |
| Don't know | 0 | (0.0) | 5 | (2.5) |

NOTE: This table includes numbers (percentages) for the types of interpreter services received during the first visit of patients who completed satisfaction surveys. Percentages do not total to 100 because some patients selected multiple responses.

Table 2. Predicted Means Based on Multivariate Analyses

| Outcome During Initial Visit | Predicted Mean Value | | |
|---|----------------------|---------|---------------------|
| | Treatment | Control | 95% CI for Estimate |
| Length of Emergency Room Visit (in minutes) | 164 | 126 | (0.96, 1.75) |
| Was Patient Admitted to the Hospital on Initial Visit | 7.8% | 6.6% | (0.56, 2.53) |
| Was an Intravenous Line Administered During Initial Visit | 22.5% | 20.4% | (0.49, 2.59) |
| Total Number of Tests and Procedures | 8.3 | 7.2 | (0.78, 1.72) |
| Number of Different Types of Tests and Procedures | 4.3 | 3.7 | (0.89, 1.52) |
| Number of Prescription Drugs Provided | 1.2 | 1.0 | (0.89, 1.63) |
| Amount of Services Billed | \$1,579 | \$1,303 | (0.98, 1.50) |
| Returned to the same ED within 72 Hours | 3.1% | 2.8% | (0.43, 3.03) |
| Returned to the same ED within 30 Days | 10.7% | 9.5% | (0.57, 2.25) |

Figure 1: Percentage of Respondents "Very Satisfied" with Patient-Provider Communication



Average net cost, per case, of providing interpreters was \$96

- Costs per treatment group member varied by site
- Hospital 1: 3.4 patients per time block (average cost \$66)
 - Hospital 2: < 1.0 patient per time block (average cost \$200)

Conclusions

Intervention did not generate any detectable savings in health care costs
 Net cost of \$96 per case significantly increased percentage very satisfied

- Patients: 72 percentage points
- Providers: 75 percentage points, on average

Policy Relevance

Greater provider satisfaction could reduce staff turnover at a time of health care provider shortages

Improving satisfaction might increase hospital revenues

- Garman et al. (2004) found that a one-point increase in satisfaction on a 5.0-point scale translated to a \$2.3 million increase in annual hospital revenues
- Patient might return to same ED in the future

Cost of providing interpreters is modest relative to the cost of services billed

- Cost per treatment group member was about 7 percent of the amount the hospital billed for the ED visit, on average
- Provides some support to the business case for funding interpreter services

Limitations

Only able to track returns to same ED or hospital

Unable to assess effects on quality of care

Limited generalizability

- Two New Jersey hospitals
- Spanish-speaking patients only

Participants not blinded to treatment status

Acknowledgments

Funded under grant number 55879 by the Robert Wood Johnson Foundation

ClinicalTrials.gov - Clinical Trial Number: NCT01041014