Going It Alone?
The impact of stand-alone vs. EHR-integrated e-prescribing systems

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Background

➢ Most of the landmark studies done on e-prescribing were conducted in large academic medical centers.

➢ Very little empirical data on the value of e-prescribing in the ambulatory setting.

➢ Part of a larger study to assess the value of e-prescribing in the ambulatory setting.

➢ Overall study includes 1) shadowing clinicians, 2) focus groups with e-prescribers, 3) claims analysis, and 4) a survey of physicians enrolled with an e-prescribing vendor.
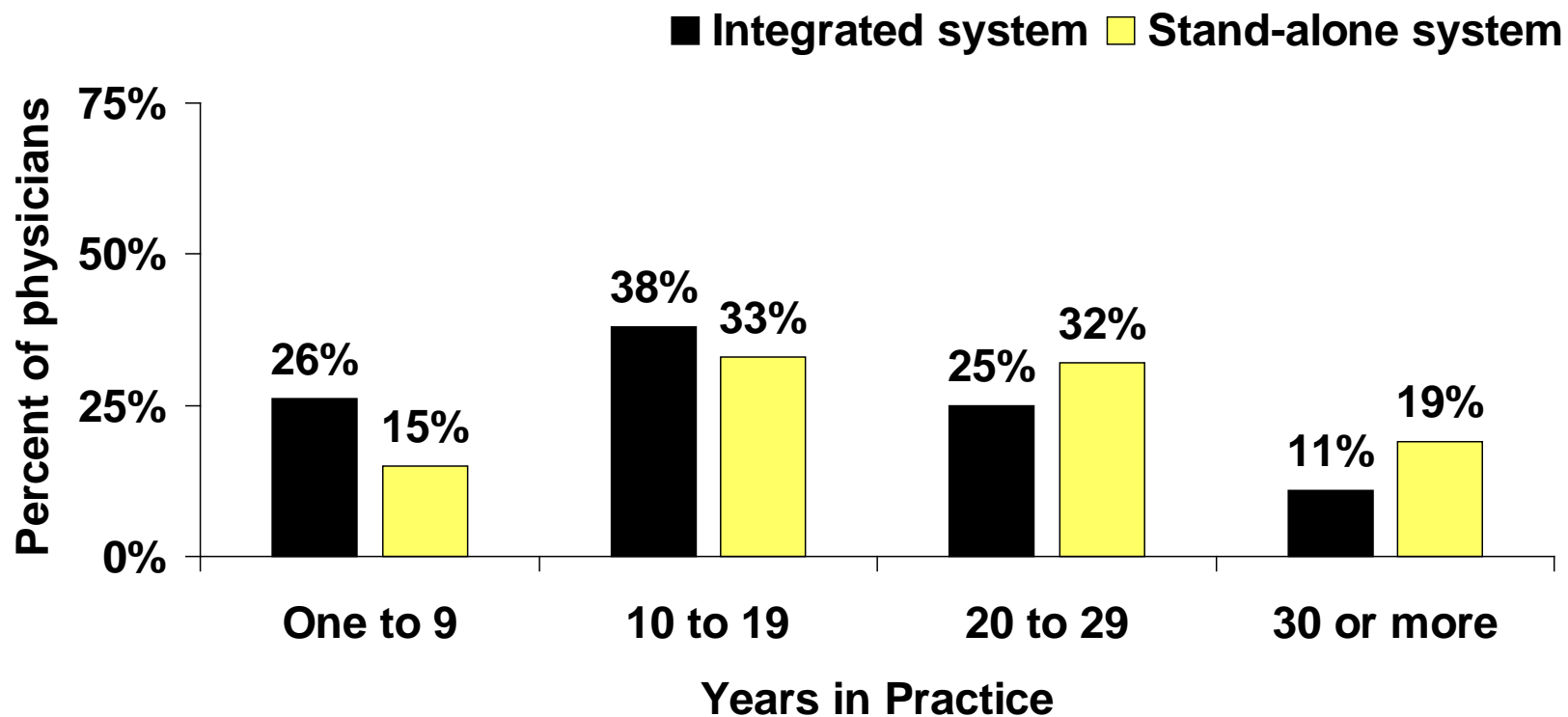
Methodology

➢ <u>Survey</u>: Self-administered questionnaire

➢ <u>Mode</u>: Sequential mixed-mode survey (email followed by multiple mailings and telephone follow-up)

➢ <u>Sample</u>: 2,000 physicians enrolled with the 15 largest e-prescribing vendors in the US

➢ <u>Strata</u>: regular use (n=1,540) and low use (n=460)

➢ <u>Field period</u>: April – September 2009

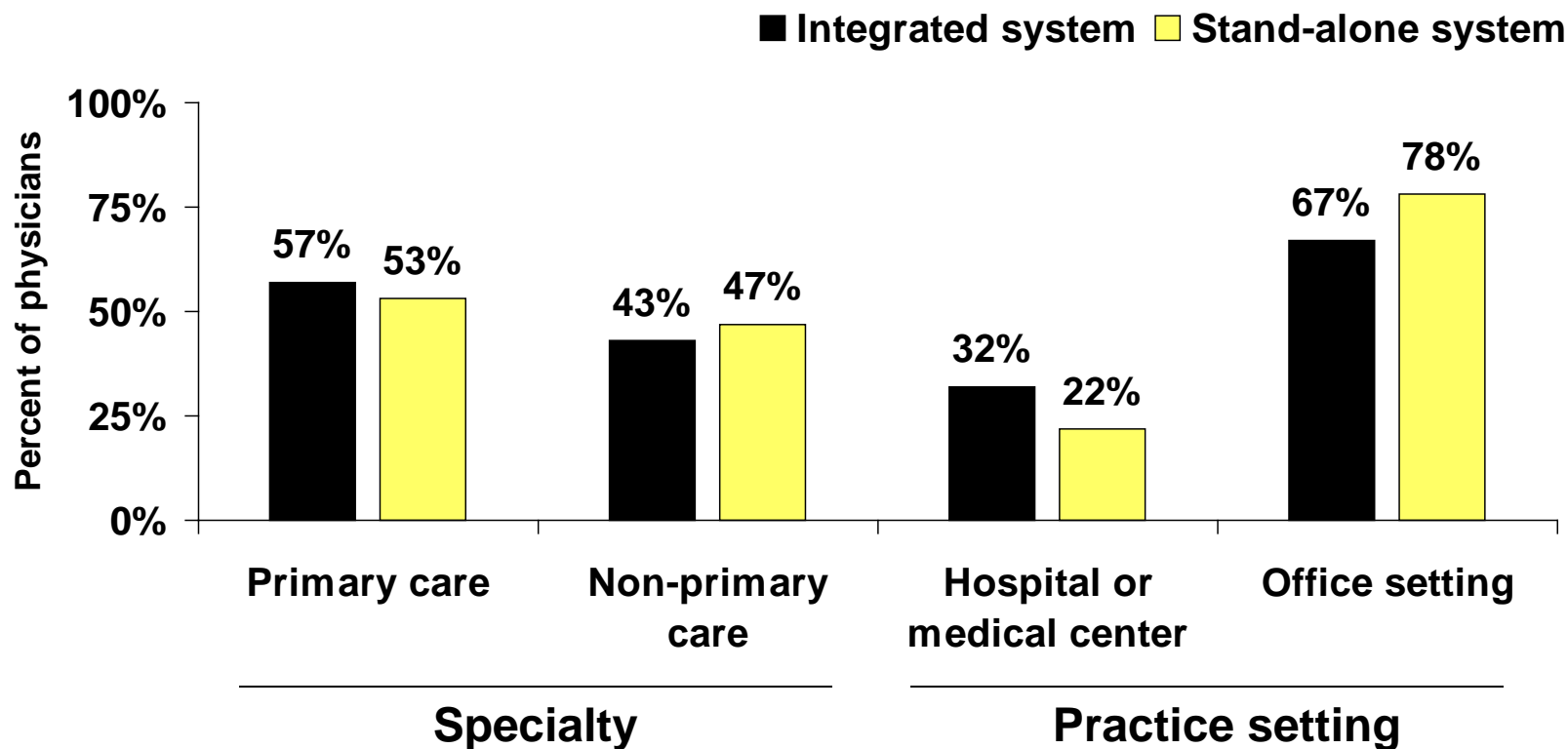➢ <u>Response rate</u>: 51% regular use strata, 53% low use strata

Analysis

➢ Bivariate and multivariable analysis

➢ <u>Key independent variable</u>: type of e-prescribing system

- "Is the electronic prescribing system at your main practice site integrated with an electronic health record system OR a "stand-alone" electronic prescribing system?"

➢ <u>Control variables</u>: gender, race, ethnicity, specialty, number of years in practice, practice size, clinical setting, location, and region

➢ <u>Dependent variables</u>: use of system, ease of prescribing, effect on practice, satisfaction, effect on prescribing safety.

System type by years in practice

Percent of physicians

■ **Integrated system** □ **Stand-alone system**

Years in Practice	Integrated system	Stand-alone system
One to 9	26%	15%
10 to 19	38%	33%
20 to 29	25%	32%
30 or more	11%	19%

Years in Practice

System type by specialty and clinical setting

Using an e-prescribing system

Use e-prescribing system most or all of the time to	Integrated system	Stand-alone system
Write the prescription	78%	58%*
Send the prescription to the pharmacy	80%	71%*
Check formulary information	39%	26%*
Check drug history	70%	35%*

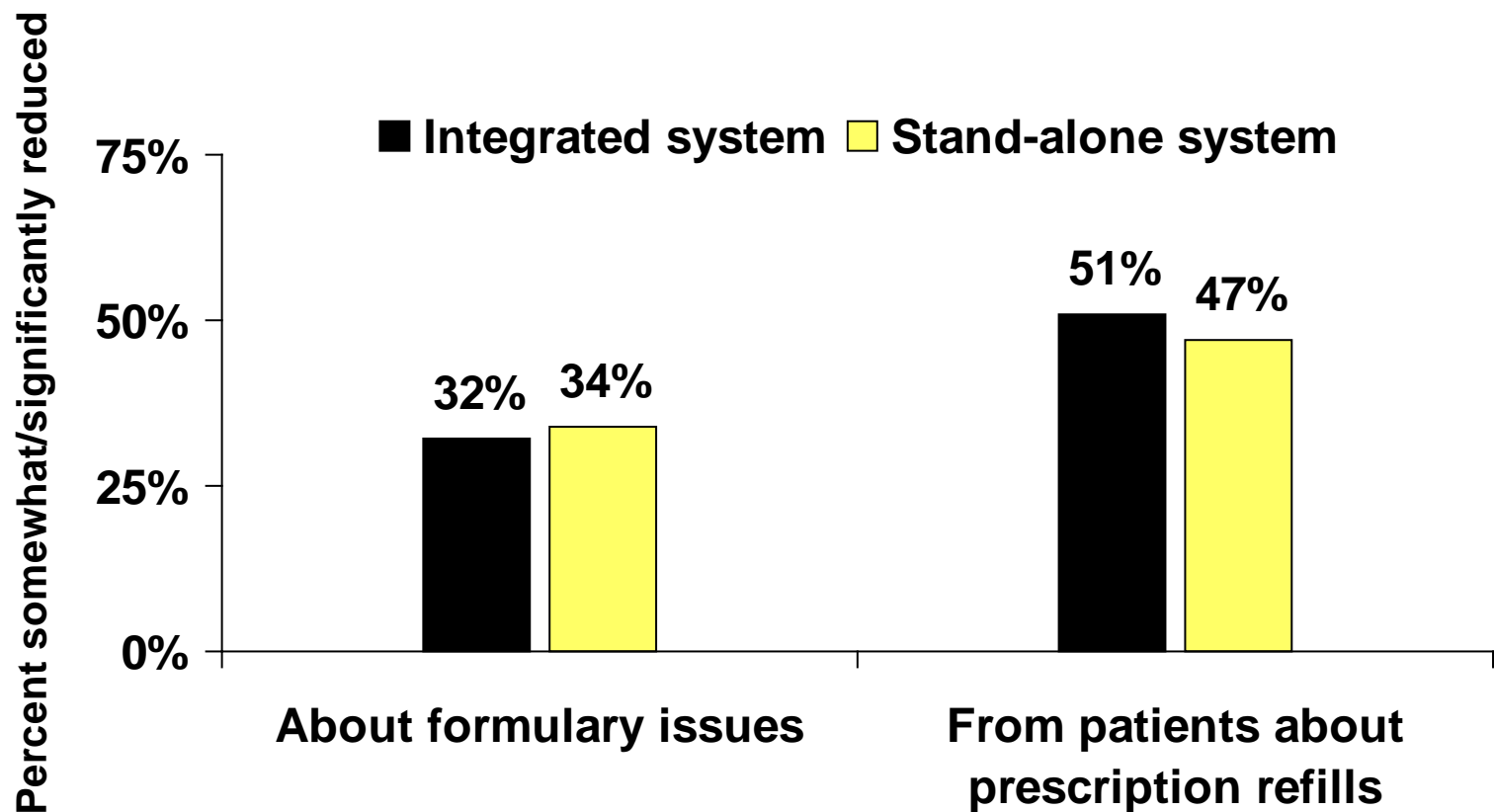*$p \leq .01$ after adjusting for specialty, years in practice, practice size, clinical setting, location and region

Source: Authors preliminary analysis of 2009 National Survey of E-prescribers.

Effect of e-prescribing system on ease of prescribing
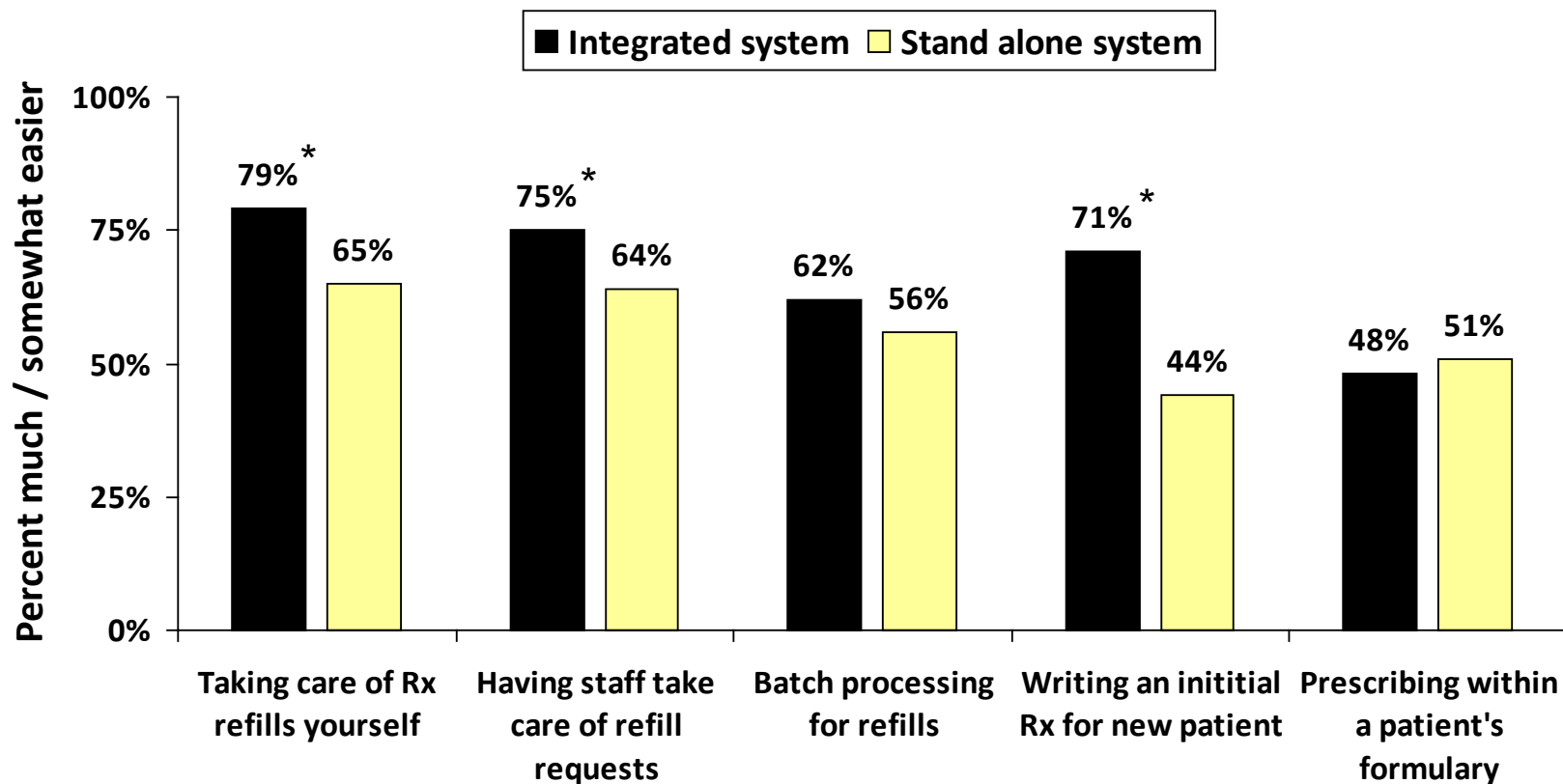
■ Integrated system ☐ Stand alone system

Percent much / somewhat easier

	Taking care of Rx refills yourself	Having staff take care of refill requests	Batch processing for refills	Writing an inititial Rx for new patient	Prescribing within a patient's formulary
Integrated system	79%*	75%*	62%	71%*	48%
Stand alone system	65%	64%	56%	44%	51%

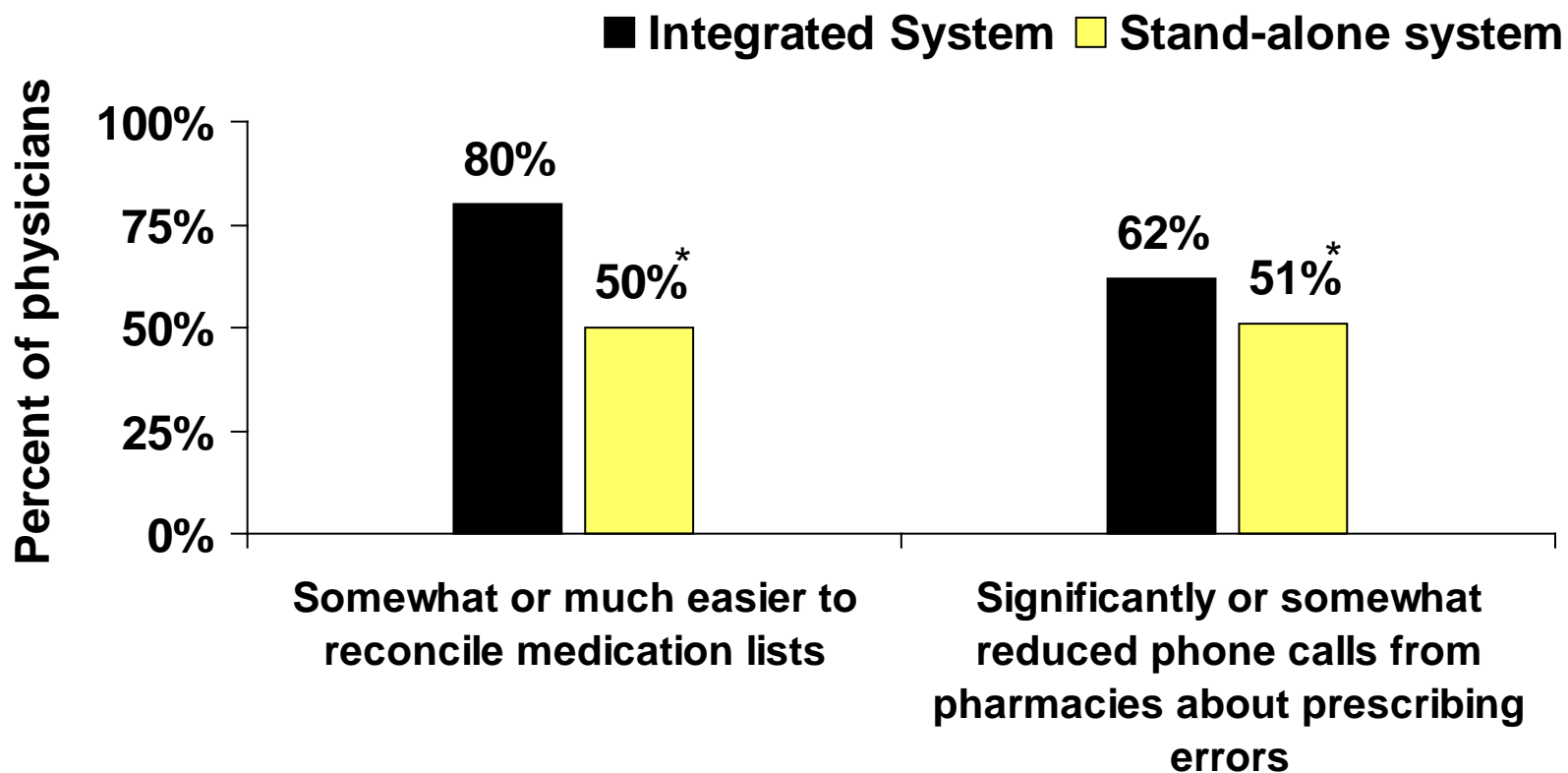* P ≤ .01 after adjusting for physician specialty, years in practice, practice size, clinical setting, location, and region of the US in which the physician practices.

# Effect of e-prescribing on phone calls the office receives

Percent somewhat/significantly reduced

■ Integrated system ☐ Stand-alone system

About formulary issues: Integrated system 32%, Stand-alone system 34%

From patients about prescription refills: Integrated system 51%, Stand-alone system 47%

Source: Authors preliminary analysis of 2009 National Survey of E-prescribers.

Effect of e-prescribing on prescribing safety

Source: Authors preliminary analysis of 2009 National Survey of E-prescribers.

Effect of e-prescribing on prescribing safety (con't.)

■ **Integrated System** □ **Stand-alone system**

* P ≤ .01 after adjusting for physician specialty, years in practice, practice size, clinical setting, location, and region of the US in which the physician practices.
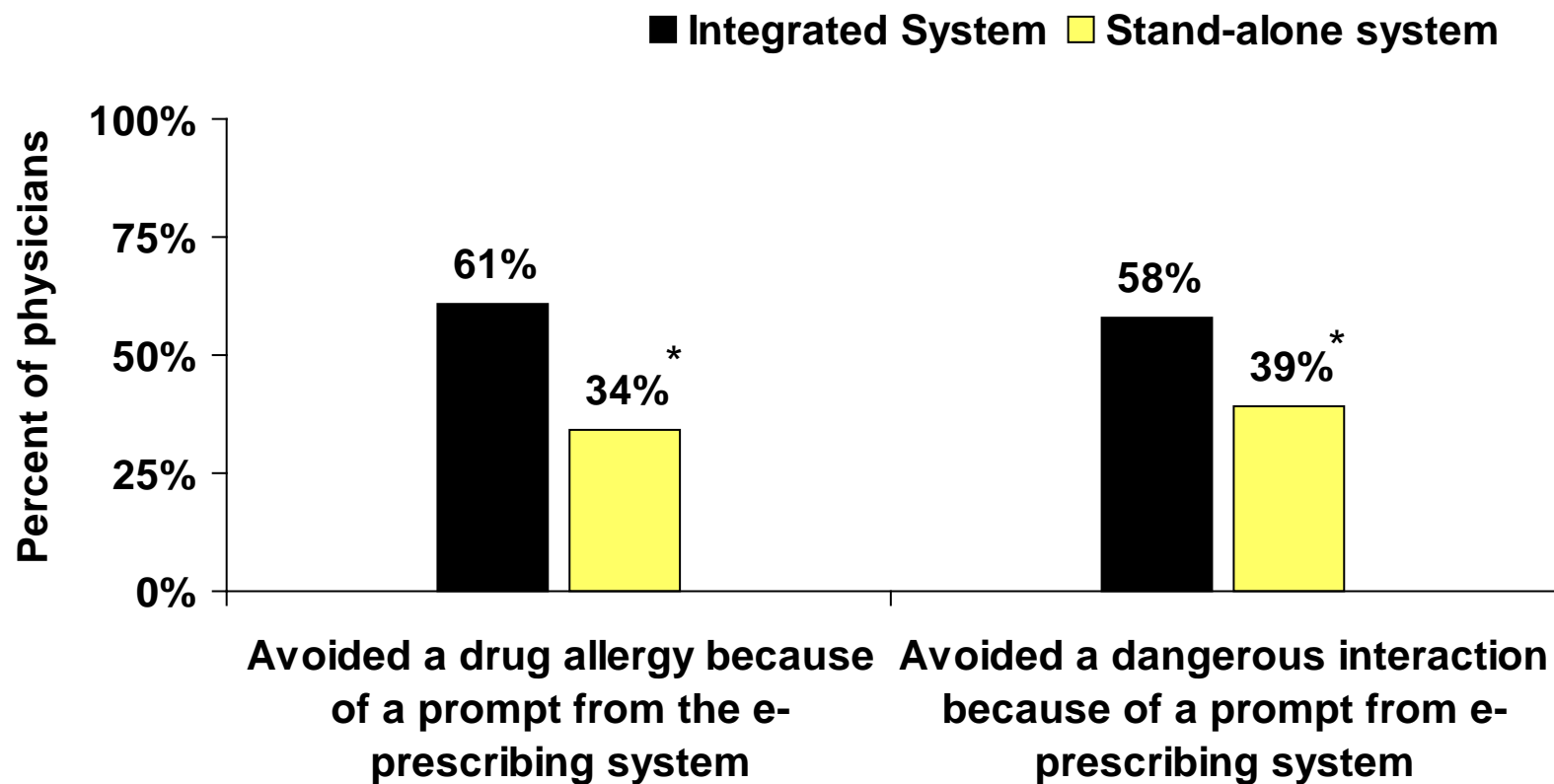
Source: Authors preliminary analysis of 2009 National Survey of E-prescribers.

Limitations

➢ Sample included only physicians who were signed up with an e-prescribing vendor.

➢ Possible that non-response bias exists.

➢ Cannot verify the accuracy of respondents' reports of e-prescribing or reductions in errors.

Implications

➢ Use of e-prescribing by type of system differs in three important ways: extent of use, depth of use, and value-added use.

➢ Type of system was not associated with in greater efficiencies.

➢ Type of system was associated with prescribing safety.

➢ Will these gains in safety offset the cost of moving to an integrated system?

Other factors to consider

➢ American Recovery and Reinvestment Act funding.

- Even physicians with integrated systems may not be using them to the extent necessary to fulfill criteria.

- Reinforces the need for changes in the clinical workflow.

➢ The changing model of physician organizations.