



Division of  
**Pharmacoepidemiology & Pharmacoeconomics**



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# **Changing Physician and Patient Perceptions About Generic Drugs**

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# Disclosure

- I have no actual or potential conflicts of interest in relation to this presentation.

# The Case for Generic Drugs

## ❑ Savings

- ❑ \$1.7 trillion over the past decade
- ❑ 88% of prescription drugs filled, 28% of costs

-GPhA & IMS (2015).

## ❑ Clinical interchangeability

- ❑ Substitution with “A-rated” interchangeable generic drugs
  - ❑ Bioequivalent: 90% confidence intervals for brand-to-generic ratios of the maximum serum concentration ( $C_{max}$ ) and area under the serum concentration curve (AUC) must fall within 0.80 to 1.25
  - ❑ Pharmaceutically equivalent: same dosage strength and form
- ❑ Review of all A-rated generic drugs approved 1996-2007
  - ❑ Average difference:  $C_{max}$ =4.4%, AUC=3.6%

-Davitt et al., Ann Pharmacotherapy (2009).

- ❑ No randomized controlled trials have identified clinically significant variations in outcomes between brand-name and A-rated generic drugs.

# Media Spotlighting: Generic Drug Issues

- ❑ Adequacy of approval standards
  - ❑ Erroneous understanding
    - ❑ “A generic’s maximum concentration of active ingredient in the blood must not fall more than 20% below or 25% above that of a brand name.”

-Eban, Fortune (2013).
  - ❑ Non-rigorous case reports and observational studies
  - ❑ Of particular concern
    - ❑ Narrow therapeutic index drugs
      - ❑ *E.g.*, levothyroxine
    - ❑ Extended-release products
      - ❑ *E.g.*, extended-release methylphenidate

# Objectives

- ❑ To compare pharmacists' and patients' perceptions of, preferences for, and responses to changes in pill appearance

# Methods: Physicians

- ❑ Target population: actively practicing physicians
  - ❑ 300 internists
  - ❑ 900 specialists: endocrinology, hematology, and infectious diseases
- ❑ Data source: American Board of Internal Medicine Master File
- ❑ Honorarium: \$50
- ❑ Instrument
  - ❑ Questions
    - ❑ Demographic information
    - ❑ Perceptions of generic drugs
    - ❑ Frequency of prescribing generic drugs
  - ❑ Mode of administration: email invitation, online completion
- ❑ Date: August 2014-January 2015

# Methods: Patients

- ❑ Target population: 1,450 patients
  - ❑ Self-reported chronic conditions
  - ❑ Filled at least 1 prescription in past 3 months
- ❑ Data source: CVS Advisor Panel
- ❑ Honorarium: CVS Extra Bucks; starting: 2; completing: 15
- ❑ Instrument
  - ❑ Questions
    - ❑ Demographic information
    - ❑ Perceptions of generic drugs
    - ❑ Frequency of requesting generic drugs
  - ❑ Mode of administration: email invitation, online completion
- ❑ Date: August 2014

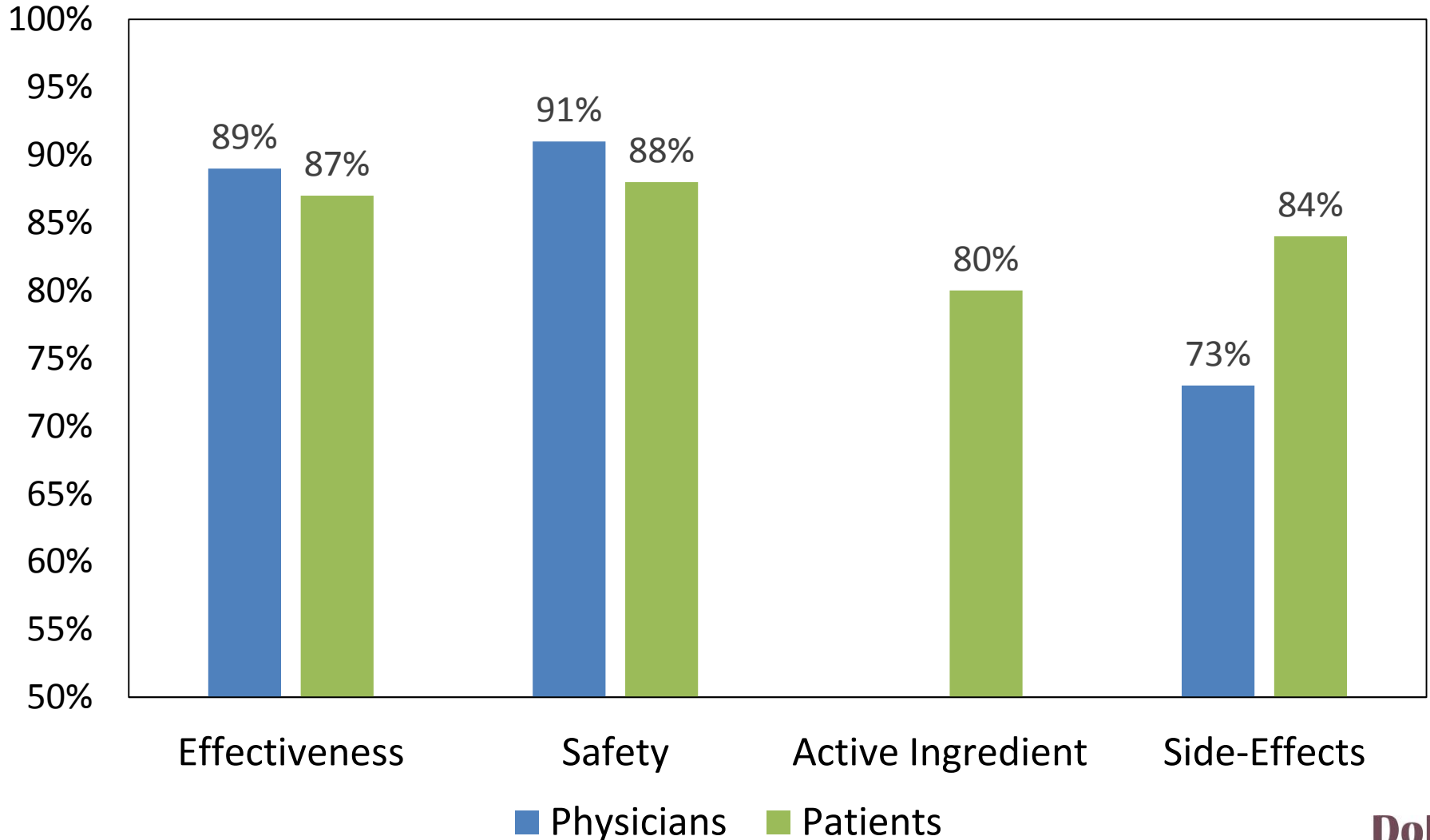
# Response Rates and Demographics

	Physicians N=718 (62% response)	Patients N=933 (65% response)
Characteristic	% (n/N respondents)	% (n/N respondents)
Age (mean [SD])	50 (13)	46 (10)
Sex		
-Male	54 (374/687)	41 (306/742)
-Female	46 (313/687)	59 (436/742)
Race/ethnicity		
-Caucasian	58 (393/675)	80 (586/733)
-Non-Caucasian	42 (282/675)	20 (147/733)
Education		
-US-trained	61 (387/639)	N/A
-Non-US-trained	39 (252/639)	N/A
-College graduate	N/A	59 (433/733)
-Non-college graduate	N/A	41 (300/733)



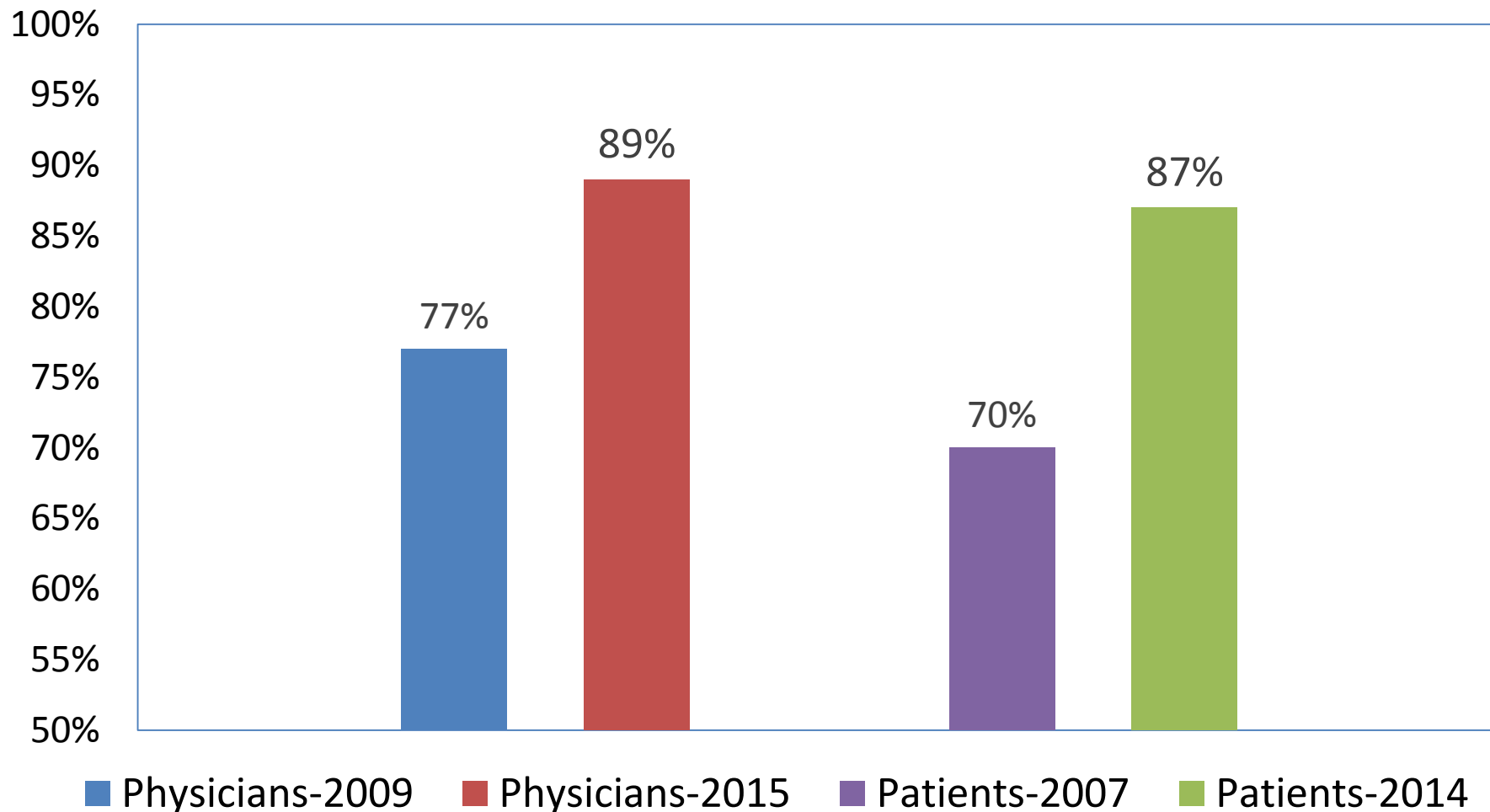
# Perceptions

Generic Drugs Have The Same [\_\_\_\_] As Brand-Name Drugs



# Evolving Perceptions

## Generic Drugs Are As Effective as Brand-Name Drugs

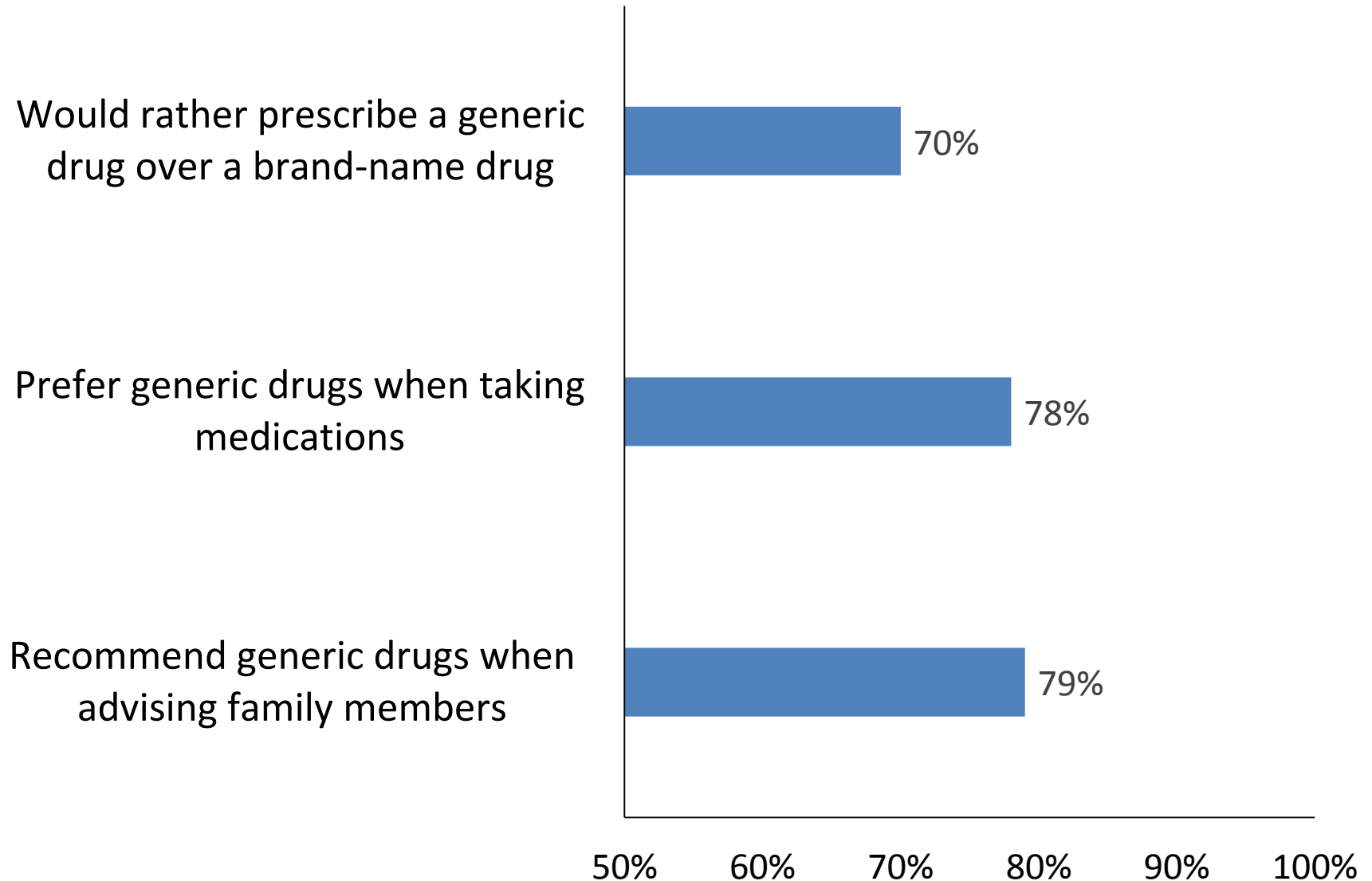


-Shrank et al., Health Aff (2009).

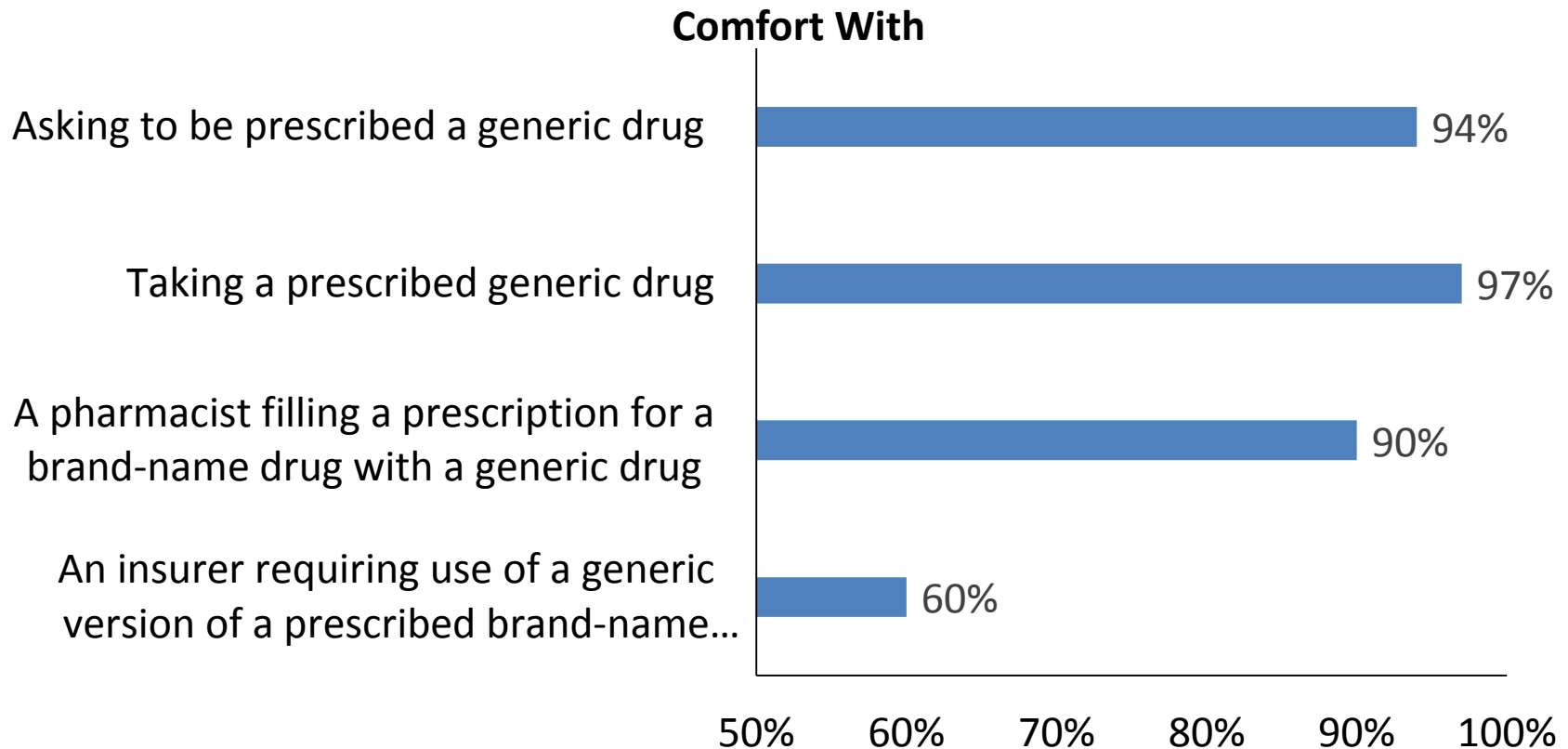
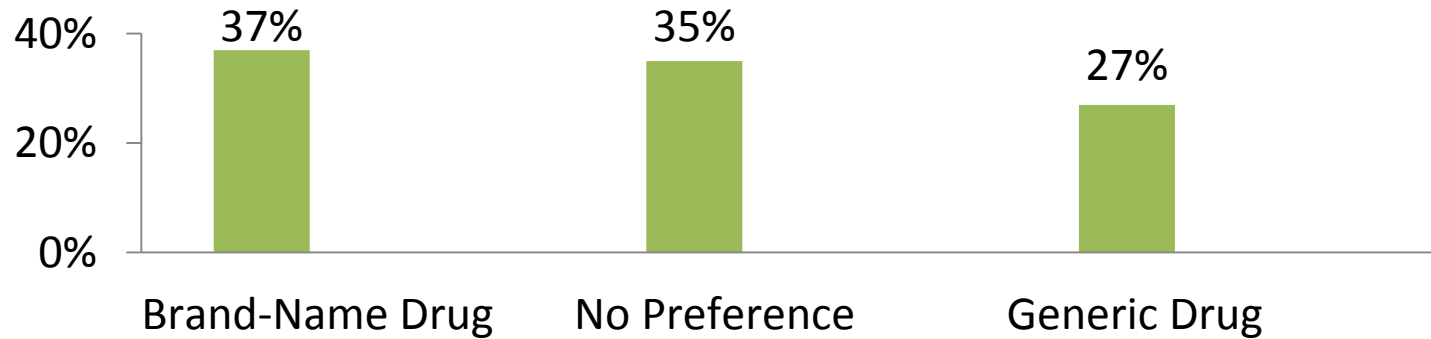
-Shrank et al., Ann Pharmacotherapy (2011).



# Physician Preferences

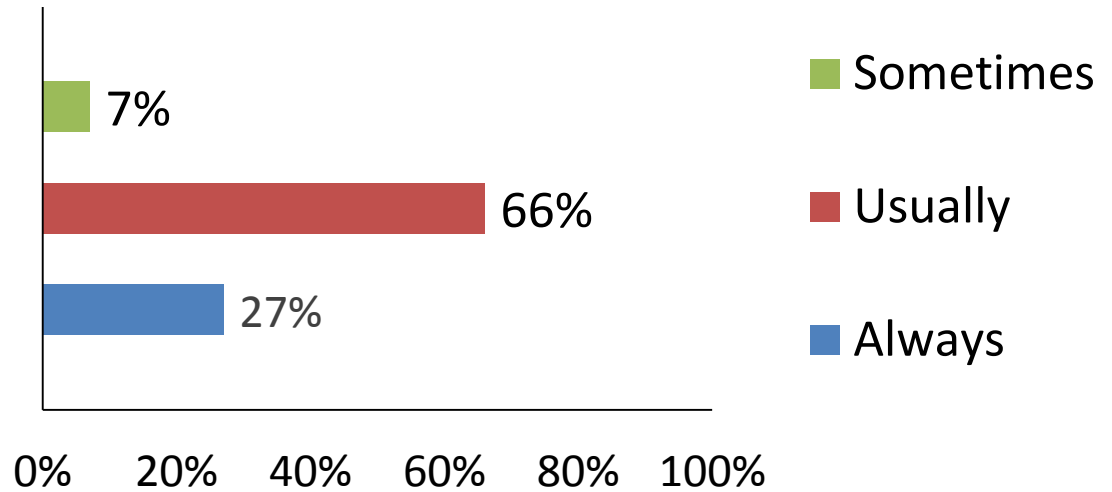


# Patient Preferences

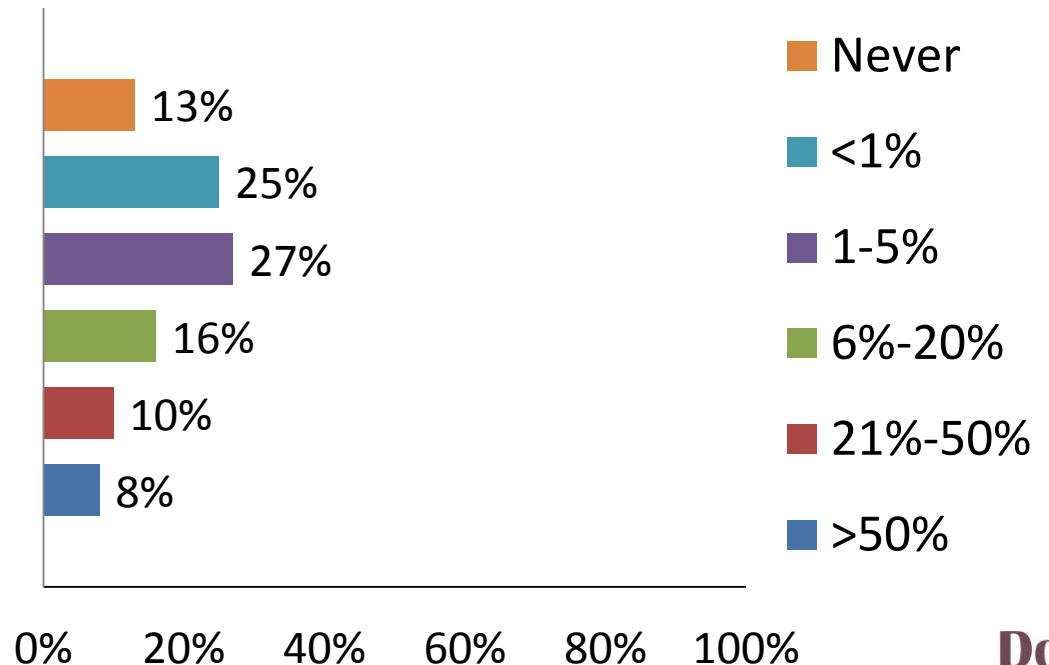


# Physician Actions

How often do you prescribe a generic drug, if one is available, for a patient who needs a prescription?

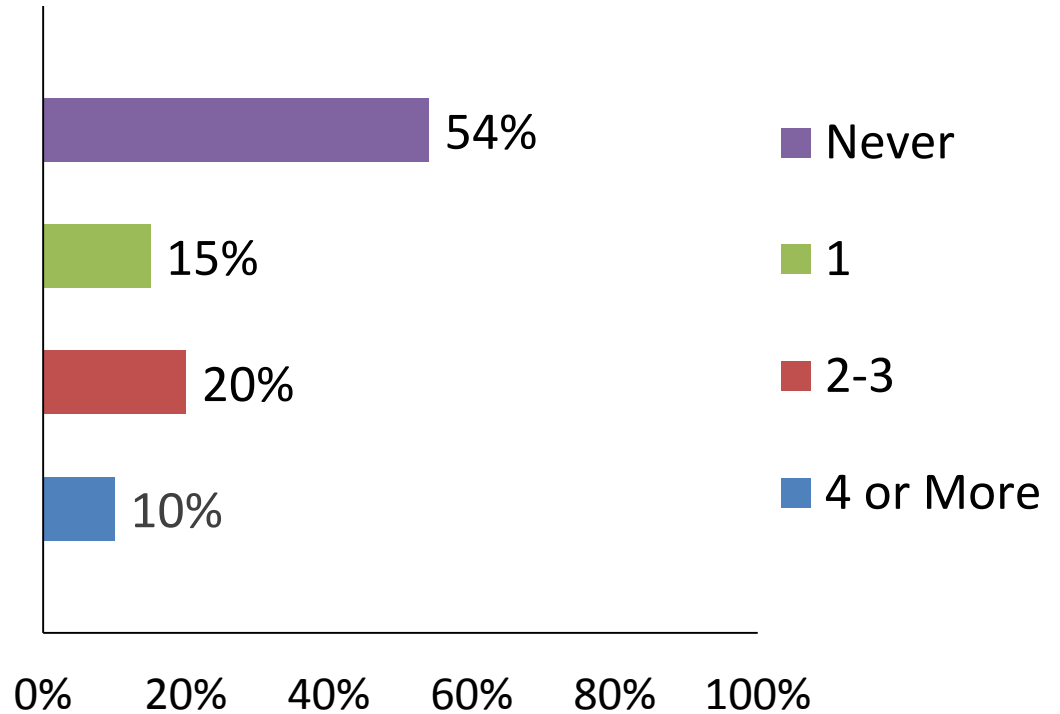


When you write a prescription for a brand-name drug for which an FDA-approved generic version is available, how often do you specifically request pharmacists not fill it with the generic?



# Patient Actions

How many times have you asked a doctor to prescribe a brand-name drug rather than a generic in the last year?



# Predictors of Perceptions and Actions

- ❑ Multivariable logistic regression
  - ❑ Adjustments
    - ❑ Physicians: demographic and practice variables
    - ❑ Patients: household income, education, and age
- ❑ Physicians
  - ❑ Learning about generic drug availability from drug representatives
    - ❑ Generic skepticism: 35% vs. 30% ( $p=0.26$ )
    - ❑ Brand-name only prescribing: 47% vs. 30% ( $p<0.001$ )
- ❑ Patients
  - ❑ Non-Caucasians
    - ❑ Generic skepticism: 43% vs. 29% ( $p<0.01$ )
    - ❑ Requested brand-name drugs: 56% vs. 43% ( $p<0.01$ )

# Conclusions

- ❑ Vast majority of physicians and patients have positive views of generics
  - ❑ Substantial increase over earlier national surveys
- ❑ Lingering negative perceptions and suboptimal practices exist
  - ❑ Generic skepticism: 32%
  - ❑ Dispense as written >5% of prescribing: 34%
- ❑ Targeted educational outreach possibly beneficial
  - ❑ Minority patients
  - ❑ Physicians who frequently interact with brand-name drug companies



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