this finding, including the hectic and stressful nature of code situations and inability of the current inpatient medical record—particularly code sheets—for capturing important details around cardiac arrests like team dynamics, quality of chest compressions, or systems-level factors (eg, staffing). Finally, we demonstrated that even when preventable errors are identified, reviewers believed that their occurrence had little impact on overall survival owing to the critically ill nature of these patients. Our findings have important implications for future efforts to measure and improve quality of care for cardiac arrests in hospitalized patients.

Renuka Jain, MD
Latoya Kuhn, MPH
William Repaskey, MD
Paul S. Chan, MD, MSc
Steven L. Kronich, MD
Scott Flanders, MD
Brahmaje K. Nallamothu, MD, MPH

Correspondence: Dr Jain, Cardiovascular Center, University of Michigan Medical Center, SPC 5783, 1500 E Medical Center Dr, Ann Arbor, MI 48104 (renuka@umich.edu).

Author Contributions: Dr Jain and Ms Kuhn had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: Jain, Flanders, and Nallamothu. Acquisition of data: Jain, Repaskey, and Nallamothu. Analysis and interpretation of data: Jain, Kuhn, Chan, Kronich, Flanders, and Nallamothu. Drafting of the manuscript: Jain, Kuhn, Flanders, and Nallamothu. Critical revision of the manuscript for important intellectual content: Jain, Repaskey, Chan, Kronich, Flanders, and Nallamothu. Statistical analysis: Kuhn and Nallamothu. Obtained funding: Jain and Flanders. Administrative, technical, and material support: Jain and Flanders. Study supervision: Jain, Kronich, and Nallamothu.

Financial Disclosure: None reported.

Funding/Support: This study was funded by the Michigan Institute of Clinical and Research Institute Translational Sciences Award (grant UL1RR024986) and the Blue Cross Blue Shield of Michigan Foundation.

Additional Contributions: Ernest Saxton, RN, worked as National Registry of Cardiopulmonary Resuscitation Coordinator at the University of Michigan Hospital and assisted in obtaining data for this study. Timir Baman, MD, Comilla Sasson, MD, MS, and Anhoney Couray, MD, assisted as reviewers.


HEALTH CARE REFORM

Perception of Drug Safety and Knowledge Influences Drug Selection

Since 1997, people have faced a constant barrage of direct-to-consumer television and print advertisements for prescription drugs, so it is conceivable that the term drug side effect would be understood by many Americans. However, the degree to which the American public understands drug safety is unknown. We investigated the association between the level of self-perceived knowledge about drug safety and the impact of such knowledge on patient input when being prescribed a new prescription medication.

Methods. Harris Interactive’s HarrisPollOnline (HPOL) was used to conduct a cross-sectional survey of adults in the United States that evaluated individuals’ knowledge about drug safety, the importance they accorded drug safety knowledge, and their preference for active participation in prescribing decisions. Respondents provided free-text response to the question “What does the term drug safety mean to you?” Two authors (K.B.V. and S.L.W.) independently determined whether each category addressed a drug side effect or adverse drug events (ADEs), drug effects appropriate for the condition being treated (physiologic effects), both, or neither. To assess the respondent’s level of knowledge about drug safety, we used a composite variable derived from 3 questions, each of which had a 5-level Likert response format to rate their knowledge about drug side effects, serious safety events, and drug-drug interaction. We also asked respondents to rank how important knowledge of drug side effects and drug-drug interactions was to them. By weighting respondent’s knowledge of drug safety by its importance, we developed a 3-level categorical variable: low, medium, and high level of knowledge and importance (henceforth noted as weighted knowledge). Our primary outcome was whether the respondents preferred to choose the medications to be prescribed (as appropriate for their condition) or to have the physician select their medication. A secondary outcome was what occurred during the last physician-patient interaction when a medication was prescribed. We evaluated the following covariates for both confounding and effect modification: age, sex, race/ethnicity, education, previous ADEs, respondent-defined drug safety, and whether the respondent sought information on drug safety or was interested in participating in a drug safety monitoring program. We used logistic regression to estimate odds ratios for the 2 outcomes of interest.

Results. We included 1481 respondents, of which approximately one-third were aged from 18 to 39 years (one-third were aged from 40 to 54 years and the remainder were 55 years or older). There were slightly more women (n = 807 [54.5%]) than men, and most were white (n = 1099 [75.6%]). Of the 1481 respondents, more than half (n = 853) defined drug safety with respect to ADEs, and 611 (41%)
defined drug safety in terms other than ADEs or physiologic effects, suggesting that a large percentage of respondents were not familiar with commonly accepted drug safety concepts. Almost 62% of our study population rated their knowledge of drug safety as somewhat knowledgeable or knowledgeable, yet rated importance of drug safety as important.

We found a positive relationship between a respondent’s knowledge about drug safety (weighted) and their desire to choose the medication themselves ($P = .006$) (Table). Compared with those who fall in the lowest level of weighted knowledge of drug safety, those categorized as having medium and high levels of weighted knowledge were 1.26 (95% confidence interval, 1.07-1.48) and 1.58 (95% confidence interval, 1.14-2.18) times more likely to want to choose the medication themselves, respectively.

When we limited the analysis to the 839 patients who were currently taking a prescription medication, the results still suggested that more knowledgeable respondents were more likely to want participation in their medication choice, but the trend was not statistically significant ($P = .33$) (data not shown).

Comment. To our knowledge, this study is the first of its kind to use a questionnaire to determine how respondents define drug safety and to examine how they prefer to interact with their clinicians when being prescribed medications. Based on our review of the way that respondents describe drug safety, the general public has difficulty in defining this concept. This research also suggests that the extent of understanding drug safety, weighted by the importance of this understanding, influences a respondent’s participation in the selection of their medications. Furthermore, how well informed respondents are about drug safety is positively associated with how involved they are in the process of selecting their prescriptions.

This study was conducted using a multimillion member panel, which is likely to provide similar information to that derived from a survey of the general population. We found that the concept of drug safety is difficult to define, but many believed that a general knowledge of drug safety was important. Those who were both more knowledgeable and believed that knowing about drug safety was important were more likely to participate in the decision process on medication prescribing with their physicians.

Kristen B. Van Dole, PhD, MSPH
Suzanne L. West, MPH, PhD
Mary Mease, MPH, RPh
Axel Olsen, PhD

Author Affiliations: Department of Epidemiology, Gillings School of Public Health, University of North Carolina, Chapel Hill (Drs Van Dole and West); Center for Drug and Evaluation Research, Food and Drug Administration, Silver Spring, Maryland (Ms Mease); and Pharmaceutical Safety Institute, Newtown, Pennsylvania (Dr Olsen). Dr Van Dole is now with the Worldwide Epidemiology Department at GlaxoSmithKline, Research Triangle Park, North Carolina. Dr West is now with RTI International, Research Triangle Park. Ms Mease and Dr Olsen are now with Quintiles Incorporated, Durham, North Carolina.

Correspondence: Dr Van Dole, Worldwide Epidemiology Department, GlaxoSmithKline, PO Box 13398, 5 Moore Dr, Research Triangle Park, NC 27709 (kristen.b.van-dole@gsk.com).

Author Contributions: Study concept and design: West and Olsen. Acquisition of data: Van Dole and West. Analysis and interpretation of data: Van Dole, West, and Mease. Drafting of the manuscript: Van Dole, West, and Mease. Critical revision of the manuscript for important intellectual content: West and Olsen. Statistical analysis: Van Dole and West. Obtained funding: West. Administrative, technical, and material support: West and Olsen. Study supervision: West.

Financial Disclosure: None reported.