



Medical Decision Making

Decisions about medication use and cancer screening across age groups in the United States[☆]

Kathleen M. Fairfield^{a,*}, Bethany S. Gerstein^b, Carrie A. Levin^b, Vickie Stringfellow^b, Heidi R. Wierman^c, Mary McNaughton-Collins^b

^a Department of Medicine And Center for Outcomes Research and Evaluation Maine Medical Center Research Institute, Portland, Maine, USA

^b Informed Medical Decisions Foundation, a Division of Healthwise, Boston, USA

^c Division of Geriatrics Maine Medical Center, Portland, Maine, USA

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ABSTRACT

Objective: To describe decision process and quality for common cancer screening and medication decisions by age group.

Methods: We included 2941 respondents to a national Internet survey who made at least one decision about colorectal, breast, and prostate cancer screening, blood pressure or cholesterol medications. Respondents were queried about decision processes.

Results: Across the five decisions considered, decision process scores were similar (and generally low) across age groups for medication and cancer screening, indicating that all groups had poor involvement in medical decision making. Overall knowledge scores were low across age groups, with elderly (75+) having slightly higher knowledge about medications vs. younger respondents. Elderly respondents reported similar goals and concerns when making decisions, though placed greater importance of having peace of mind from a normal result for cancer screening vs. younger respondents.

Conclusion: Across age groups, respondents reported poor decision processes about common medications and cancer screening, despite little evidence of benefit for some interventions (cancer screening, cholesterol lowering medicines in low risk elderly) and possibility of harm in the elderly.

Practice implications: Particular care should be taken to help patients understand both benefit and risk of screening tests and routine medications.

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1. Introduction

Improving the quality of medical decisions by encouraging such practices as shared decision making (SDM) [1] is a provision of the Affordable Care Act and is part of the patient-centered medical home movement [2]. However, the medical community has struggled to provide resources promoting shared decision making for providers and patients [3]. Informing patients about their healthcare choices, eliciting their preferences, and involving them in medical decisions has therefore depended on the existing skills of healthcare providers. However, providers may not have the skills [4] or resources [5] they need to implement SDM in clinical practice. Many providers may see informed decision making as an

activity limited to situations where a major medical intervention (e.g., surgery) is being considered [6]. However, commonplace decisions such as whether or not to be routinely screened for cancer [7] or whether or not to start and stop taking medications [8,9] are also understood to be opportunities for shared decision making.

For the elderly, benefits of screening for malignancies diminish while risk of both treatment and competing risks rise [10,11]. The US Preventive Services Task Force does not recommend screening for breast, colorectal, or prostate cancers for those over age 75 [12]. Overdiagnosis and overtreatment in the setting of more limited life expectancy and comorbidities are known downsides to cancer screening in the elderly [13]. However, substantial evidence demonstrates that inappropriate cancer screening in the elderly is common and burdensome [14–21]. Similarly, decisions about drug treatment of common medical conditions such as hypertension and hyperlipidemia in the elderly should involve soliciting patient goals and concerns because of the risks of polypharmacy and medication side effects as well as out-of-pocket costs [22].

[☆] We presented an earlier version of this analysis as a poster at the National SGIM meeting in Denver, CO, USA in 2013.

* Corresponding author at: Department of Medicine, 22 Bramhall Street, Portland, Maine, E 04105, USA. Tel.: +1 207 661 7614; fax: +1 207 662 3110.

E-mail address: fairfk@mmc.org (K.M. Fairfield).

In this report, we describe the self-reported quality of decision-making processes, reported importance of specific goals and concerns, and knowledge scores of adults across age groups considering cancer screening and common medication choices.

2. Methods

2.1. Study design, recruitment and sampling

This sample was drawn from a cross-sectional survey of adults aged 40 and over in the United States to assess quality of decision making about 10 discrete medical decisions. We sampled households from a probability-based Internet sample which was fielded by Knowledge Networks between November 2 and December 13, 2011. The sample was recruited through both random-digit dialing and address-based sampling (to enable the inclusion of households served only by cell phones or who had no telephone service). Those who were selected but did not have computers or Internet service were provided with both so that they could be included in the sample.

2.2. Survey

The survey sample was drawn in two stages. First, a sample of individuals was drawn from the population as described above and invited to participate in the survey. This sample was queried with a set of questions designed to identify eligible participants. To be eligible, they had to report that in the past 2 years they made a decision about, or discussed with a medical provider, at least one cancer screening test (screening for colorectal cancer, breast cancer (mammogram), or prostate cancer (PSA test)), medication (for hypertension, high cholesterol, depression), or surgical intervention (for arthritis of the knee, arthritis of the hip, cataracts, or frequent low back pain). Those not meeting the criteria were not eligible for further participation. Those who were eligible continued with the applicable module of the survey, focusing on the details of their interactions with their providers. When a respondent was eligible for more than two modules, a probability selection was made such that less common decisions were given a higher probability of selection, and no respondent completed more than two modules. Automated email reminders to non-responders in the surveyed group were sent after three days and periodically until the end of the survey period (December 13, 2011). Additional details of the survey have been reported elsewhere [23].

Results from the survey were weighted to reflect selected demographic and geographic characteristics of the US population as well as to adjust for different probabilities of selection associated with selecting which decisions would be addressed in the survey so that the sample is representative of the US population of adults over the age of 40. This paper excludes all the surgical decisions because they are the subject of another report.

For each of the medical decisions we studied with the unique modules (cancer screening for colorectal, prostate and breast cancer and medications for high cholesterol and high blood pressure), respondents were queried about decision process. The survey design and survey instruments were modeled largely on the DECISIONS study conducted by the University of Michigan [24–28]. For the current study, each module covered several topics for the decision addressed (1) quality of the interactions between the patients and their provider, such as whether pros and cons were addressed, whether the patient's opinion was sought, and who made the final decision, (2) recommendations from the provider, (3) respondent's report about the importance of several possible goals and concerns (including inconveniences of cancer screening, avoiding false alarms, having piece of mind, having to deal with a cancer that might not cause any harm, side effects, out of pocket

costs, and having to take medication); (4) patient involvement in the decision, (5) goals and concerns, (6) sources of information about the decision, and (7) response to between three and five knowledge questions related to the specific decision. The prostate and breast cancer screening modules included 24 questions, colorectal cancer had 28 questions, and the medication module included 25 questions (medications queried included those for blood pressure, cholesterol, and depression).

2.3. Data analysis

A decision process score [29] was calculated as the sum of four components of shared decision making as follows: (discussion of pros of the intervention: “some/a lot” = 1, “none/a little” = 0) + (discussion of cons of the intervention: “some/a lot” = 1, “none/a little” = 0) + (whether the patient's input was asked: “yes” = 1, “no” = 0) + (whether the choices were explained: “yes” = 1, “no” = 0). The minimum possible score is 0 (poor decision process), the maximum is 4 (excellent decision process). For example, if a respondent reported that their provider discussed pros of the intervention, the cons of the intervention, asked for input, and explained the choices, the score would be 4. If none of those elements were included in the discussion, the score would be zero. We present the mean and standard error (SE) for each decision module (Table 2). We also present discussion of pros and cons for each decision in the figure according to age.

We examined means and standard errors of ratings assigned to five unique questions about the importance of several decision-specific goals and concerns, each on a scale of 0–10 (text only). Age was the primary variable of interest (<60, 60–74, 75+) for this analysis and we refer to the 75+ group as the elderly. We used 75+ as our cutoff because the US Preventive Services Task Force does not recommend colon, breast, or prostate cancer screening above age 75, and the risk/benefit tradeoff for polypharmacy rises in the elderly. We considered the alternative of using age 65 (coinciding with Medicare eligibility) as our cutoff, but chose 75 because of the reasons above and because of our desire to explore whether decision making differed in those individuals who are least likely to benefit from medical interventions because of comorbidities and shorter life expectancy (namely, the 75 and older group). The sample was divided into three age groups to allow for examination of trends across age groups.

We present data on all respondents who chose to have the intervention (engage in the screening test or to take or continue taking medication) in question in this analysis. Our rationale for this was that those who did not have the intervention may not have been offered it, and did not have a decision to make. We carried out a sensitivity analysis amongst those who did not have the intervention.

We stratified by whether or not the respondent reported risk factors for heart disease because this may influence decision making about starting new medications. We excluded missing observations (only 1–2% of all observations across modules) from calculations. We used adjusted ANOVA and chi-square to analyze data and report descriptive statistics as appropriate, accounting for the complex survey design. All analyses were completed using the IBM SPSS Complex Samples Module, version 20 (SPSS, Inc.). All analyses took into consideration the geographic stratification from the sampling design. This study was deemed to be exempt by the New England Institutional Review Board.

3. Results

3.1. Sample description

Overall, 5682 people from the Internet sample were invited to participate in the survey and 3396 (59.8%) answered questions

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