ASSESSMENT OF PHYSICIANS' COLORECTAL CANCER SCREENING PRIORITIES USING THE ANALYTIC HIERARCHY PROCESS (AHP)

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ABSTRACT

Introduction: Current colorectal cancer (CRC) screening guidelines endorse several options and recommend that patients and providers make choices through a shared decision making process. A key component of shared decision-making is determining decision priorities. Our goal was to assess primary care physicians' (PCP) priorities regarding currently recommended CRC screening programs.

Methods: PCPs from two geographically distinct sites completed an Analytic Hierarchy Process (AHP) analysis of ten CRC screening options for a typical, average-risk 50-year-old patient. The model included four major criteria: *Prevent Cancer, Avoid Side Effects*, *Minimize False Positives*, and *Optimal Test Logistics*. The latter criterion had three sub-criteria: screening *frequency*, *preparation*, and the test *procedure*. Linked elements among comparison sets were used to reduce the number of comparisons among the options from 187 to 76. We used hierarchical cluster analysis to identify common sets of priorities for the major decision criteria.

Results: The study sample consists of 27 academic PCPs, 19 men and 8 women, mean age 41 years. All physicians completed comparisons of the major decision criteria; 21 completed the entire analysis. The median consistency ratios for the major criteria comparisons were 0.15 and 0.12 for the entire analysis. Hierarchical cluster analysis of the major criteria priorities revealed three discreet clusters with 10, 7, and

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10 members. *Prevent Cancer* was the most important criterion in every cluster. Each of the other criteria was the second most important priority in one cluster. Priority differences among clusters for all criteria were statistically significant ($P < 0.001$).

Conclusion: PCPs' decision priorities regarding considerations affecting the choice among currently recommended CRC screening tests can be assessed using the AHP. While preventing cancer appears to be the most important consideration, several other factors play an important role in choosing a screening option.

Keywords: Medical decision making, colorectal cancer screening, linked elements