

# Rural Patients' Interests In Preventive Medical Care

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**Abstract:** A number of national studies have reported patients' interests in preventive medical care, but rural populations have not been well studied. We surveyed patients from a major clinic in rural central Minnesota to determine their interests in preventive medical care and their physicians' perceptions of those interests. Of 270 patients who responded to a questionnaire, 63–93 percent agreed that physicians should perform a wide variety of primary and secondary preventive medical services, such as periodic health examinations and counseling about smoking, exercise, and diet. Study physicians recommended most preventive medical services at least as often as did their patients, but physicians consistently underestimated patients' wishes for these services. Our results indicate that this rural clinic population is interested in a broad range of preventive medical services, which was not fully appreciated by the physicians. (J Am Board Fam Pract 1991; 4:11-8.)

The role of the primary care physician in providing preventive medical care is currently being defined.<sup>1,2</sup> Much attention has been given to evaluating the effectiveness of specific screening procedures and to recommending which ones should be routinely used by primary care physicians.<sup>3-8</sup> At the same time, the failure of physicians to follow recommended screening procedures has been reported.<sup>9-17</sup> Dietrich and Goldberg compared preventive medical services delivered by 20 subspecialists and 20 primary care physicians and found no difference in compliance with published guidelines. Both groups provided 49 percent of recommended preventive services.<sup>9</sup> Ornstein, et al. found that 13 percent to 41 percent of patients in a large university-based family practice were receiving five well-accepted health promotion services.<sup>10</sup> Other studies of primary care physicians reported similar findings.<sup>11-17</sup> Strategies to improve physician performance in preventive care have generally produced suboptimal improvements.<sup>14-19</sup> Patients' specific interests in

and acceptance of screening procedures have been shown to be higher than they actually received.<sup>13,20-24</sup>

The potential role of the primary physician in preventive medical care is not only screening for early detection (secondary prevention) but also assessment of patients' lifestyles and health habits and intervention to modify risk factors for disease (primary prevention).<sup>25</sup> Considerable attention has been devoted to identifying which changes in health habits are most important for disease prevention.<sup>26</sup> While research shows that primary care physicians believe that lifestyle factors are important, they also feel unsuccessful in their efforts to change patients' health behavior.<sup>27-29</sup> Even so, patients consider physicians to be the best source of health information, and they want advice about lifestyle changes.<sup>22,24,30</sup>

This desire for preventive medical care probably influences both the interest and the effectiveness of the physician in delivering preventive medical care and perhaps also patient satisfaction. Because past studies addressing preventive medical care are available only for some national samples,<sup>30,31</sup> our study was undertaken to answer the following questions:

1. What preventive medical services do rural patients want from physicians?
2. What characteristics of patients determine such desires?
3. How accurately do rural primary care physicians perceive their patients' interests in preventive medical services?

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## Methods

Our study site was the major medical clinic in a town of approximately 10,000 population in the farm country of central Minnesota. The clinic's primary medical staff included 6 family physicians, 1 general internist, 1 general surgeon, and 2 nurse practitioners. The only other physicians within 12 miles were a general practitioner, a psychiatrist, and an ophthalmologist.

A structured open-ended interview about preventive care was performed with 29 of 56 patients who came to the clinic during a week in February 1987 for a general medical examination. Their age range was 17 to 82 years; 15 were men and 14 were women. A written questionnaire was then designed using items from the interview. We gathered demographic information, frequency of physician visits, number of medications, health habits, health attitudes, and opinions about preventive medical care (see Appendix). A 5-point Likert scale was used to assess patients' responses to the attitude statements in the questionnaire. Health habits were measured on a 4-point scale.

The questionnaire was pilot tested with 10 patients, revised, and then distributed to 347 adults (aged 14 years and greater) during 386 consecutive clinic visits for 3 days in June 1987. It was given to patients at the appointment desk, where its purpose and anonymity were explained and voluntary participation was requested. When the patient was less than 14 years old, the form was given to the parent or responsible adult to complete. Patients who had completed the form on a previous visit were excluded. Forms were collected by clinic personnel or put in drop boxes at the patients' exit.

Forms were returned by 303 people (78 percent). There were 44 who refused, mostly elderly (mean age, 70.3 years). Although 303 questionnaires were available for analysis of demographic items, 33 patients failed to complete the reverse side of the questionnaire. Answers about preventive medical care ranged from 269 to 271.

The same questionnaire was also administered to the 8 physicians in the group, who completed it twice, once to indicate their own viewpoint and once to predict what their patients would report.

For statistical analysis, the attitude scale was collapsed to three categories: agree (including strongly agree), neutral, and disagree (including

strongly disagree). Health habits were analyzed statistically in two categories: infrequently (very little/never or occasionally), and frequently (often or always). Analysis of variance for age was grouped for the following years: 14-29, 30-49, 50-69, 70-90. The Kendall's tau-*b* statistic was used to establish statistical significance of variation of patient responses by various attitudes, habits, and demographic characteristics in the patient population, with  $P = 0.05$  selected as the level of significance. Because of the small number of physicians responding, no attempt was made statistically to compare their responses with those of their patients.

## Results

### Demographics

The average age of the 303 respondents was 40 years; S.D. = 18.7 years; range = 14 to 90 years; mode = 30 years. Ninety-one (30 percent) were men, and 211 (70 percent) were women. Ninety-seven percent were white. Twenty-four percent had not finished high school, 32 percent had graduated from high school, 30 percent had some post-high-school education, and 14 percent were college graduates. Sixteen percent were single, 70 percent married, 5 percent divorced or separated, 4 percent remarried, and 5 percent widowed. The modal number of children per patient was two. Twenty-one percent of all women were pregnant, which represented 35 percent of women between the ages of 16 and 36 years. The mean number of physician visits reported per year was 2.5.

### Attitudes

#### Patients

A small percentage of patients agreed that doctors should see only sick people and that doctors should limit themselves to prescription and diagnosis (9 and 6 percent, respectively) (Table 1). A majority agreed that physicians should provide preventive medical services, with peak agreement (93 percent) occurring with the statement that physicians should answer patients' lifestyle questions and the least agreement (63 percent) occurring with the statement that doctors should provide (unsolicited) written information. Among patients who did not agree that physicians should provide the various preventive medical services, most gave neutral answers, rather than disagreement.

### Physicians

Responses of 8 primary physicians are given in Table 1. They expressed a somewhat stronger preventive orientation than their patients. Physicians and patients responded similarly to limiting physicians' activities to diagnosis and prescription, periodic health examinations, and community education. Physicians were less positive than patients about answering patients' questions and giving out written information, and they substantially underestimated the magnitude of patient interest in these preventive medical services for all items.

### Correlations

Patients' responses were stratified by demographic factors and health habits and attitudes. Significant correlations were found for age, sex, pregnancy, education, regular checkups, smoking, diet, and taking responsibility for one's own health.

Increasing age correlated with agreement that physicians should see only sick people; in the oldest group (70 to 90 years), 57 percent agreed and 26 percent disagreed ( $P = 0.02$ ). Increasing age also correlated with agreement that physicians should mainly limit themselves to diagnosis and prescription; in the oldest age group, 27 percent agreed and 54 percent disagreed with this statement ( $P < 0.0001$ ). Older people were also less likely to agree that physicians should encourage people to exercise; in the oldest age group, 76 percent agreed and 20 percent were neutral ( $P = 0.02$ ). Other variations by age were slight and did not achieve statistical or clinical significance.

Men were slightly more likely than women to agree that physicians should limit themselves to diagnosis and prescription (12 percent men, 3 percent women [ $P = 0.02$ ]). When pregnant women were compared with age-matched nonpregnant women, a significant difference was found in agreement with the statement that physicians should give (unsolicited) written information: 75 percent of pregnant women agreed and none disagreed, while 55 percent of nonpregnant women agreed and 7 percent disagreed ( $P = 0.01$ ). No other significant differences in attitude were related to gender or pregnancy.

Those with more education had more disagreement with the idea that physicians should limit

themselves to diagnosis and prescription. This is best illustrated by the two extremes of the educational scale: 26 percent of those with no high-school education agreed and 57 percent disagreed, while 100 percent of college graduates disagreed with this statement ( $P < 0.0001$ ). No other attitudes were found to vary significantly with educational level.

No significant variation in attitudes was found when analyzed by number of physician visits per year or by number of medications being taken by the patient.

When responses to the statement that physicians should give periodic checkups to healthy people were analyzed, there was a tendency for those who actually obtain regular checkups to be in greater agreement: 83 percent of those who infrequently had checkups agreed and 5 percent disagreed, while 94 percent of those who frequently had checkups agreed and none disagreed ( $P = 0.002$ ). Not surprisingly, smokers had less agreement about physicians encouraging people to stop smoking: 67 percent of smokers ( $n = 66$ ) agreed, 29 percent were neutral, and 4 percent disagreed; while 95 percent of nonsmokers ( $n = 201$ ) agreed, 4 percent were neutral, and 1 percent disagreed ( $P < 0.0001$ ). There was a tendency for those who reported eating a high-salt diet to agree less that physicians should encourage people to eat a healthy diet: 78 percent of those who reported high-salt intake agreed, and 4 percent disagreed, while 94 percent of those who reported a low-salt intake agreed and 2 percent disagreed ( $P = 0.0002$ ). Similar variations were found among those who reported a high-fat diet or a high intake of "junk food." However, the statement about physicians encouraging people to exercise did not produce significant differences between those who exercised regularly and those who did not.

Most patients identified themselves as taking responsibility for their own health, and this group had a stronger interest in all preventive medical services than those who did not take such responsibility. Seventy percent of patients agreed, "I am careful to live a healthy lifestyle," while 26 percent were neutral, and 4 percent disagreed. Seventy-six percent of patients who were "careful to live a healthy lifestyle" agreed that doctors should have educational programs on healthy lifestyles available for patients, 70 percent of patients who

**Table 1. Patients' Responses, Physicians' Responses, and Mean Physicians' Estimates of Patients' Responses to Attitudes about Preventive Medical Care (Patient n = 269-271; Physician n = 8).**

Attitude statement <i>Doctors should</i>	% Agree	Response*	
		% Neutral	% Disagree
1. <i>Only see people when they're sick, and not see people that are well</i>			
Patients	9	21	70
Physicians	0	13	88
Physicians' estimates	50	16	34
2. <i>Mainly diagnose illness and prescribe medication, and not do much else</i>			
Patients	6	11	84
Physicians	13	0	88
Physicians' estimates	38	13	49
3. <i>Give people periodic health checkups, even if they feel fine, to check for early cancer, heart disease, or other disease</i>			
Patients	87	10	3
Physicians	88	13	0
Physicians' estimates	54	20	27
4. <i>Encourage people to quit smoking</i>			
Patients	88	10	2
Physicians	100	0	0
Physicians' estimates	74	14	13
5. <i>Encourage people to eat a healthy diet</i>			
Patients	89	9	2
Physicians	100	0	0
Physicians' estimates	66	17	17
6. <i>Encourage people to exercise</i>			
Patients	86	12	2
Physicians	100	0	0
Physicians' estimates	63	21	16
7. <i>Tell patients about any unhealthy habits that they may have</i>			
Patients	82	13	5
Physicians	100	0	0
Physicians' estimates	62	19	20
8. <i>Provide specific information to help people change unhealthy habits</i>			
Patients	87	11	2
Physicians	100	0	0
Physicians' estimates	60	22	17
9. <i>Answer patients' questions about how to stay healthy and enjoy life</i>			
Patients	93	4	3
Physicians	88	13	0
Physicians' estimates	80	13	7
10. <i>Give out written information about how to live a healthy lifestyle to their patients, even if they don't always ask for it</i>			
Patients	63	31	6
Physicians	38	50	13
Physicians' estimates	49	20	31
11. <i>Have educational programs available for patients who want to learn about how to live a healthy life</i>			
Patients	73	26	2
Physicians	88	13	0
Physicians' estimates	70	19	9
12. <i>Be involved in educating the community about how to stay healthy and enjoy life</i>			
Patients	77	21	2
Physicians	75	25	0
Physicians' estimates	71	19	11

\*Percentages do not always add up to 100% because of rounding errors.

were neutral about living a healthy lifestyle ( $n = 69$ ) agreed, and only 27 percent of those who were not careful to live a healthy lifestyle ( $n = 11$ ) agreed, ( $P < 0.01$ ). Similar trends were found for each of the other 11 items in Table 1 when stratified by patients' care to live a healthy lifestyle, and all of these were statistically significant at the  $P < 0.05$  level.

## Discussion

Our study shows that this rural patient group had very strong interests in both primary and secondary preventive medical services. We corroborated the findings in other populations,<sup>20-24,30</sup> although previous studies have focused mostly on patients' desires for screening procedures. This study is unique in that it included opinions and wishes for primary preventive medical services.

Patients' interest in physician involvement in preventive medical care beyond the diagnosis and treatment of existing illness decreased significantly with increasing age, male gender, and lower levels of education. However, the demographic factors were not associated with decreased agreement that physicians should provide specific preventive medical services. Even subgroups of patients who do not readily perceive the potential preventive roles of primary care physicians seem to want specific preventive services studied.

As expected, patients who had negative health habits (smoking, infrequent health checkups, high-salt diet) had less agreement that physicians should counsel about these specific habits. (This correlation was absent for those who did not exercise.) Even so, most (67-83 percent) agreed with physician intervention in these areas. Only a small minority (4-5 percent) disagreed, and the remainder were neutral. Hence, it seems that patients with negative health habits are potentially receptive to lifestyle interventions.

It is encouraging that most respondents (76 percent) reported that they were careful to live a healthy lifestyle, and this group had significantly more agreement that physicians should provide all the preventive services listed. However, even those who were not careful about their lifestyle had no disagreement but, rather, a higher proportion of neutral responses. This suggests that resistance to these services would probably manifest as indifference and be concentrated among patients not motivated to "live healthy."

Several methodological limitations of the study should be noted. It is uncertain how much these results can be generalized to the entire clinic population, the population of the geographic area, and the Midwestern rural population in general. Sampling consecutive patients who visited the clinic during a 3-day interval is susceptible to selection bias because of random or cyclical variation in the type of patient visits.<sup>32</sup> While the overall response rate was high (78 percent), older patients were disproportionately represented among the nonresponders. The social desirability of preventive medical care may have falsely increased positive responses among both patients and physicians. The degree to which patients would be willing to invest time and money to obtain such services was not addressed. Finally, the number of physicians responding to the questionnaire was too small to compare statistically with patient responses, although all of the physicians in the clinic responded.

It is striking nevertheless to see such a strong interest in preventive medical services. Because the clinic is the primary health care provider for the majority of persons in the area, the data probably reflect the general population of the area. In addition, the clinic population may be of greater interest to physicians than the general population of the area, because the latter would include those who do not visit the clinic for any reason.

Although physicians were generally more positive than patients about providing the preventive medical services mentioned, they significantly underestimated patients' interests for these services. This lack of perception could represent a significant barrier to the provision of such services. Further studies might address whether improving physicians' perception of patients' wishes would increase the physicians' interests and efforts to provide more prevention services. It would also be of interest to study whether physicians are able to perceive accurately patients' interests and attitudes in other areas of medical care.

It is encouraging that this rural population showed such a consistent and broad interest in both primary and secondary preventive medical care. Even in those items that varied significantly by age, sex, education, health checkup status, or smoking status, there remained a greater than 50 percent positive response in the subgroups with the lowest agreement. This study highlights the

active interest and desire of patients for preventive medical care, which may not be fully appreciated by physicians, and suggests that further research to define and improve the actual delivery of such care by physicians should be a high priority. Further studies might address to what extent patients would be willing to invest time or money for preventive services (especially lifestyle intervention), what types of educational interventions have the greatest potential for patient acceptance, and what the outcomes would be of formally implementing such services in rural primary care.

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## HEALTH QUESTIONNAIRE HUTCHINSON MEDICAL CENTER

The purpose of this questionnaire is to compile some information that might enable the doctors at the Hutchinson Medical Center and elsewhere to give better health care to their patients. The questions below deal with your personal health and lifestyle. The information is confidential, so please do not record your name.

**PLEASE TURN IN THIS SURVEY TO ONE OF THE NURSES OR CLINIC STAFF BEFORE YOU LEAVE TODAY. THANK YOU!**

Age: \_\_\_\_\_

Sex:  Male  Female

Race:  White  Black  Oriental  Native American Other: \_\_\_\_\_

Education:  Did not attend high school  Attended vo-tech  
 Attended high school  Attended college  
 Graduated from high school  Graduated from college

Marital Status:  Single  Married  Remarried  
 Divorced/Separated  Widowed

Number of Children: \_\_\_\_\_

(For females:) Are you currently pregnant?  yes  no

How many medicines are you currently taking? \_\_\_\_\_

About how often do you see a doctor?

- |                                              |                                               |
|----------------------------------------------|-----------------------------------------------|
| <input type="checkbox"/> less than once/year | <input type="checkbox"/> about once/month     |
| <input type="checkbox"/> 1-2 times/year      | <input type="checkbox"/> more than once/month |
| <input type="checkbox"/> 3-6 times/year      |                                               |

Listed below are some things you might be doing (or not doing) that may affect your health or well-being. Please answer them as follows:

- |                                               |                                        |
|-----------------------------------------------|----------------------------------------|
| <b>1 - Applies to me very little or never</b> | <b>3 - Applies to me often</b>         |
| <b>2 - Applies to me occasionally</b>         | <b>4 - Applies to me almost always</b> |

- |   |   |   |   |                                                      |
|---|---|---|---|------------------------------------------------------|
| 1 | 2 | 3 | 4 | I exercise regularly (total of at least 1 hour/week) |
| 1 | 2 | 3 | 4 | I eat balanced, nutritious meals                     |
| 1 | 2 | 3 | 4 | I eat a low-fat diet                                 |
| 1 | 2 | 3 | 4 | I eat lots of fresh fruits or vegetables             |
| 1 | 2 | 3 | 4 | I eat a lot of junk food                             |
| 1 | 2 | 3 | 4 | I eat a lot of salt                                  |
| 1 | 2 | 3 | 4 | I use over-the-counter drugs                         |
| 1 | 2 | 3 | 4 | I take vitamins or nutritional supplements           |
| 1 | 2 | 3 | 4 | I smoke or chew tobacco                              |
| 1 | 2 | 3 | 4 | I drink alcohol                                      |
| 1 | 2 | 3 | 4 | I use mood-altering drugs                            |
| 1 | 2 | 3 | 4 | I drink beverages with caffeine (coffee or pop)      |
| 1 | 2 | 3 | 4 | I am exposed to harmful chemicals                    |
| 1 | 2 | 3 | 4 | I get enough sleep                                   |
| 1 | 2 | 3 | 4 | I have a lot of stress                               |
| 1 | 2 | 3 | 4 | I get a health check-up from a physician regularly   |
| 1 | 2 | 3 | 4 | I see a chiropractor                                 |
| 1 | 2 | 3 | 4 | I wear a seat belt when travelling in a car          |
| 1 | 2 | 3 | 4 | I engage in hobbies and leisure activities           |
| 1 | 2 | 3 | 4 | I pray or meditate regularly                         |
| 1 | 2 | 3 | 4 | I work very hard                                     |
| 1 | 2 | 3 | 4 | I sit around a lot                                   |

*Continued* ◆

- |   |   |   |   |                             |
|---|---|---|---|-----------------------------|
| 1 | 2 | 3 | 4 | I take time for family      |
| 1 | 2 | 3 | 4 | I take time for friends     |
| 1 | 2 | 3 | 4 | I worry a lot               |
| 1 | 2 | 3 | 4 | I often spend time outdoors |
| 1 | 2 | 3 | 4 | I have a healthy sex life   |

For the statements below, please **circle 1 if you strongly agree (SA), 2 if you agree (A), 3 if you are neutral (N), 4 if you disagree (D), or 5 if you strongly disagree (SD).**

- | SA | A | N | D | SD |                                                                                   |
|----|---|---|---|----|-----------------------------------------------------------------------------------|
| 1  | 2 | 3 | 4 | 5  | I am in good health                                                               |
| 1  | 2 | 3 | 4 | 5  | I am careful about living a healthy lifestyle                                     |
| 1  | 2 | 3 | 4 | 5  | I am primarily responsible for maintaining my health                              |
| 1  | 2 | 3 | 4 | 5  | I enjoy life                                                                      |
| 1  | 2 | 3 | 4 | 5  | I could be more healthy if I changed my lifestyle                                 |
| 1  | 2 | 3 | 4 | 5  | I would probably live longer if I changed my lifestyle                            |
| 1  | 2 | 3 | 4 | 5  | I would enjoy life more if I changed my lifestyle                                 |
| 1  | 2 | 3 | 4 | 5  | I weigh significantly more than my ideal weight                                   |
| 1  | 2 | 3 | 4 | 5  | My doctor helps me to live a healthy and enjoyable life                           |
| 1  | 2 | 3 | 4 | 5  | My doctor answers my questions about my health                                    |
| 1  | 2 | 3 | 4 | 5  | I think that my doctor could do more to help me live a healthy and enjoyable life |
| 1  | 2 | 3 | 4 | 5  | My doctor is primarily responsible for maintaining my health                      |

The following statements describe things that doctors might do to help people that aren't sick to stay healthy and enjoy life. Again, please **circle 1 if you strongly agree (SA), 2 if you agree (A), 3 if you are neutral (N), 4 if you disagree (D), or 5 if you strongly disagree (SD).**

- | SA | A | N | D | SD |                                                                                                                                           |
|----|---|---|---|----|-------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | 2 | 3 | 4 | 5  | Doctors should only see people when they're sick, and not see people that are well                                                        |
| 1  | 2 | 3 | 4 | 5  | Doctors should mainly diagnose illness and prescribe medication, and not do much else                                                     |
| 1  | 2 | 3 | 4 | 5  | Doctors should give people periodic health check-ups, even if they feel fine, to check for early cancer, heart disease, or other disease  |
| 1  | 2 | 3 | 4 | 5  | Doctors should encourage people to quit smoking                                                                                           |
| 1  | 2 | 3 | 4 | 5  | Doctors should encourage people to eat a healthy diet                                                                                     |
| 1  | 2 | 3 | 4 | 5  | Doctors should encourage people to exercise                                                                                               |
| 1  | 2 | 3 | 4 | 5  | Doctors should tell patients about any unhealthy habits that they may have                                                                |
| 1  | 2 | 3 | 4 | 5  | Doctors should provide specific information to help people change unhealthy habits                                                        |
| 1  | 2 | 3 | 4 | 5  | Doctors should answer patients' questions about how they can stay healthy and enjoy life.                                                 |
| 1  | 2 | 3 | 4 | 5  | Doctors should give out written information about how to live a healthy lifestyle to their patients, even if they don't always ask for it |
| 1  | 2 | 3 | 4 | 5  | Doctors should have educational programs available for patients who want to learn about how to live a healthy lifestyle                   |
| 1  | 2 | 3 | 4 | 5  | Doctors should be involved in educating the community about how to stay healthy and enjoy life                                            |

**PLEASE TURN IN THIS SURVEY TO ONE OF THE NURSES OR CLINIC STAFF BEFORE YOU LEAVE TODAY. If you have any comments on it, please let us know. THANK YOU VERY MUCH FOR YOUR COOPERATION!**