Estimation of the Time Needed to Deliver the 2020 USPSTF Preventive Care Recommendations in Primary Care

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See also Galea and Vaughan, p. 17.

Objectives. To reexamine the time required to provide the US Preventive Services Task Force (USPSTF)–recommended preventive services to a nationally representative adult patient panel of 2500.

Methods. We determined the required time for a single physician to deliver the USPSTF preventive services by multiplying the eligible population, annual frequency, and patient-contact time required for each recommendation, all calculated by using data from the recommendations themselves and literature. We modeled a representative panel of 2500 adults based on the 2010 US Census Bureau data.

Results. To deliver the USPSTF recommended preventive services across a 2500 adult patient panel would require 8.6 hours per working day, accounting for 131% of available physician time. Compared with 2003, there are fewer recommendations in 2020, but they require 1.2 more physician patient-contact hours per working day.

Conclusions. The time required to deliver recommended preventive care places unrealistic expectations on already overwhelmed providers and leaves patients at risk. This is a systems problem, not a time-management problem. The USPSTF provides a set of recommendations with strong evidence of positive impact. It is imperative that our health care system is designed to deliver. (*Am J Public Health*. 2021;111:145–149. https://doi.org/10.2105/AJPH.2020.305967)

For primary care, there is an increasing gap between what is expected and what is realistic. Our expectations of these physicians have been ever increasing. The increase in workload per primary care visit has far outpaced any increase in visit duration, resulting in more to accomplish in less time.[1] Not surprisingly, physicians are feeling more rushed, overwhelmed, and less effective than ever before.[2,3]

In addition to providers, patients are suffering. Preventive care rates remain startlingly low, putting millions of patients at unnecessary risk each year. Less than half of adults aged 65 years or older are up to date on core preventive services with significant racial and ethnic

disparities placing a large number at particular disadvantage.[4] Many reasons have been posited for these low rates,[5] but the most significant barrier is time.

More than 15 years ago, Yarnall et al. contributed one of the most comprehensive efforts to quantify the gap between the expectation and reality of primary care by estimating the amount of time required to deliver the 1996 US Preventive Services Task Force (USPSTF) recommendations to a nationally representative patient panel.[6] Their main finding was that there was not enough time to deliver the recommended preventive services.

During the years since this work was published, a lot has changed—

guidelines, population demographics, and advancements, such as health information technology, decision aids, and team-based care. This analysis provides an update on the original work of Yarnall et al.,[6] analyzing the current time requirements for preventive care recommendations. Our specific results differ from those of Yarnall et al., but the conclusion is unchanged: there still is not enough time for prevention.

METHODS

We leveraged many data sources to determine the total time necessary to provide preventive services to an adult

population. We used data from the 2010 US Census Bureau[7] to model a representative panel of 2500 adults with age and gender distribution based on that of the US population. In addition, using the 2020 USPSTF recommendations and literature (https://bit.ly/2JVh6Ql), we derived (1) a list of recommended preventive services and, for each, the (2) population eligible to receive it, (3) frequency of performing each, and (4) patient-contact time required to deliver. The Appendix (available as a supplement to the online version of this article at http://www.ajph.org) details the assumptions, data sources, and references used for each recommendation and calculation.

The USPSTF recommendations are based on systematic review of evidence, assessment of the balance between harms and benefits, and the certainty and magnitude of the net benefit.[8] We only included services given a grade of either "A" or "B," which were indicated as highly beneficial to patients, in our analysis. We only included services recommended for men and nonpregnant women aged 25 years and older. Although these recommendations are certainly not exhaustive, they represent the most strongly recommended and evidence-based primary care preventive services for adults. Immunizations, an important pillar of preventive care, are not included in the USPSTF recommendations.

For each recommended service, the USPSTF recommendation stated eligible population criteria (e.g., screening for osteoporosis in women aged 65 years and older). We conducted further research to quantify the eligible population.

Where a range was cited, we used the most conservative frequency estimate (e.g., for breast cancer screening every 1 to 2 years, we used a frequency of every 2 years). We excluded any

service recommended only 1 time within the lifetime of a patient. Where any recommendation stated "periodically," we assumed annual screenings.

We used 1 of 3 possible approaches to determine the amount of patient-contact time needed to deliver each recommended service. The USPSTF served as first point of reference. When it was not included in the recommendation, we referenced literature. Lastly, if both options were exhausted, we used time estimates from Yarnall et al.,[6] in which ordered tests were 1 minute, health checks performed by nurses were 0.25 minutes for physicians to review results, and counseling services were 1.5 or 3 minutes depending on complexity of the topic. All times assume the service is provided by a single physician.

Assuming services are delivered by a single physician, we determined the time needed to deliver preventive services by multiplying eligible population, annual frequency, and time required per service, which can be expressed as $\sum_{i=1}^{N} p_i f_i t_i$, where services are numbered from 1 to N, p_i represents the population eligible for service i, f_i represents the annual frequency for service i, and t_i represents physician time required to administer service i. We calculated the 1569.6 total available direct contact physician hours to deliver all preventive, chronic, and

acute care similarly, assuming physicians spend 32.7 hours per week in direct patient care.[9] Conversions assume 48 weeks per year and 5 days per week.

RESULTS

Table 1 shows the age and gender distribution of the representative panel of 2500 adult patients. Using these estimates, we determined that a single physician would need at least 8.6 hours per day to deliver all grade A and B USPSTF recommendations (Table 2), with counseling making up a large majority of this time (Table 3). Based on total physician time available, ensuring the provision of all USPSTF recommendations would require 131% of physicians' direct patient care time (Table 3). It is important to note that this estimated time does not include the administrative work required to deliver this care, which has been estimated to contribute an additional 2 hours for every 1 hour spent in direct patient care.[10] Literature posits that primary care physicians should spend only 16% of their available time on preventive care[11] as compared with the acute and chronic care they are also responsible for delivering, highlighting a significant gap.

Comparing the analysis by Yarnall et al. of the 1996 USPSTF recommendations[6] with ours of the 2020 recommendations, the net change is 4 fewer recommended services but 1.2 more

TABLE 1— Representative Panel From the 2010 US Census Bureau

Patient Age Group	Male, No.	Female, No.	Total, No.
25–34 y	253	251	504
35–44 y	251	253	504
45–54 y	271	280	552
55–64 y	216	232	447
≥ 65 y	213	281	494
Total	1204	1296	2500

TABLE 2— Time Requirements for Each 2020 US Preventive Services Task Force Recommendation for Adults Aged 25 Years and Older in Representative Practice: United States

Grade[a]	Preventive Service	Eligible Population Description	No.	Annual Frequency	Minutes Per Service	Hours Per Year
		Screening				
A	Blood pressure	All	2500	1	0.25	10.42
B	BRCA risk assessment	Women with personal or family history or susceptibility	240	1	5	19.98
A	Cervical cancer	Women aged 21–65 y	1015	0.3	3	16.92
B	Chlamydia and gonorrhea	High-risk women	82	1	3	4.08
A	Colorectal cancer	Adults aged 50–75 y	1214	0.1	34.4	69.63
B	Depression	All	2500	1	4	166.67
B	Diabetes	Overweight and obese adults aged 40–70 y	994	0.3	1	4.97
B	Hepatitis B	High-risk adults	338	1	1	5.63
B	Hepatitis C	Injection drug users	65	1	1	1.08
A	HIV	Adults aged 15–65 y and high-risk adults aged ≥65 y	137	1	1	2.29
B	Intimate partner violence	Women of reproductive age	504	1	4.4	36.93
B	Lung cancer	Criteria-meeting adults aged 55–80 y	159	1	1	2.66
B	Mammogram	Women aged ≥40 y	921	0.5	1	7.68
B	Osteoporosis	Postmenopausal women at increased risk and women aged ≥65 y	659	0.2	1	2.20
A	Syphilis	High-risk adults	137	4	1	9.15
B	Tuberculosis	High-risk adults	188	1	1	3.13
B	Unhealthy alcohol use	All	2500	1	1	41.67
		Counseling				
B	BRCA genetic counseling	Those who screen positive	14	1	1	0.24
B	Fall prevention	Community-dwelling adults aged ≥65 y who are at increased risk	140	1	1.5	3.50
B	Healthy diet and physical activity	Overweight and obese adults with CVD risk factors	481	1	30	240.39
B	Obesity	Adults with a body mass index of ≥30	995	1	15	248.75
B	STI prevention	High-risk adults	1786	1	30	892.91
A	Tobacco cessation	All	2500	1	3	125.00
B	Unhealthy alcohol use reduction	Those who screen positive	750	1	5	62.50
		Preventive medication				
B	Aspirin use to prevent CVD and colorectal cancer	High-risk adults without previously diagnosed CVD	54	1	1.5	1.36
B	Breast cancer preventive medications	High-risk women	57	1	1.5	1.43
A	Folic acid	Women of reproductive age	504	1	1.5	12.59
A	HIV preexposure prophylaxis	High-risk adults	1786	1	1.5	44.65
B	Statin use to prevent CVD	Criteria-meeting adults without history of CVD	822	1	1.5	20.55
Total required physician hours per y						2058.9
Total required physician hours per d						8.6

Note. BRCA = breast cancer gene; CVD = cardiovascular disease; STI = sexually transmitted infection.

[a]The US Preventive Services Task Force recommends that grade A and B services are provided. Grade A services have a high certainty of substantial net benefit; grade B services have a moderate to high certainty of moderate to substantial net benefit (https://www.uspreventiveservicestaskforce.org/uspstf/grade-definitions).

TABLE 3— Time Requirement for 2020 US Preventive Services Task Force–Recommended Services by Category

	No. Recommendations	No. Hours per Day	No. Hours per Year	% of Available Physician Time
Screening	17	1.7	405.1	26
Counseling	7	6.6	1573.3	100
Preventive medication	5	0.3	80.6	5
Total	29	8.7	2058.9	131

hours per day required to deliver all recommended services.

DISCUSSION

Our research reveals the infeasibility of a single physician delivering all USPSTF recommendations via quantitative analysis of the time requirement across a nationally representative adult patient panel. Immunizations and non–patient-facing administrative work are not included in time estimates.

The implications are serious for primary care physicians, many of whom are already overwhelmed and burned out.[12] Excessive workload is a main driver of physician burnout, even more so when considering the associated clerical and documentation tasks required.[10,13–16] All the while, low preventive care persists, affecting morbidity, mortality, and quality of life for both individuals and populations.[17–22]

That the amount of time required to administer the current recommendations is still unrealistic for a single physician is in fact a systems problem and not a time-management problem. Seeking to reduce the amount of time these services require or prioritizing some services over others fails to recognize the importance of delivering all of these strongly supported recommendations to at-risk populations. This can only be done by redesigning the structure of primary care delivery. Many ideas present promise, such as team-based care,[11,23] clinical–community coordination and integration,[24–27] and investing in science and policy of practice.[28,29]

PUBLIC HEALTH IMPLICATIONS

Since the analysis by Yarnall et al.,[6] a lot has changed, but the conclusion today is unchanged: there still is not enough time for prevention. This is a systems problem and not a time management problem. The USPSTF provides a set of recommendations with strong evidence of positive impact. It is imperative that our health care system is redesigned to deliver. AJPH

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CONTRIBUTORS

N. Privett originated the project and main conceptual ideas. S. Guerrier performed primary research and initial data analyses. Both authors developed the numerical model. N. Privett updated analyses. Both authors wrote the article.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to claim.

HUMAN PARTICIPANT PROTECTION

This work did not involve any human participants or nonpublic data; therefore, institutional review board approval was not sought.

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