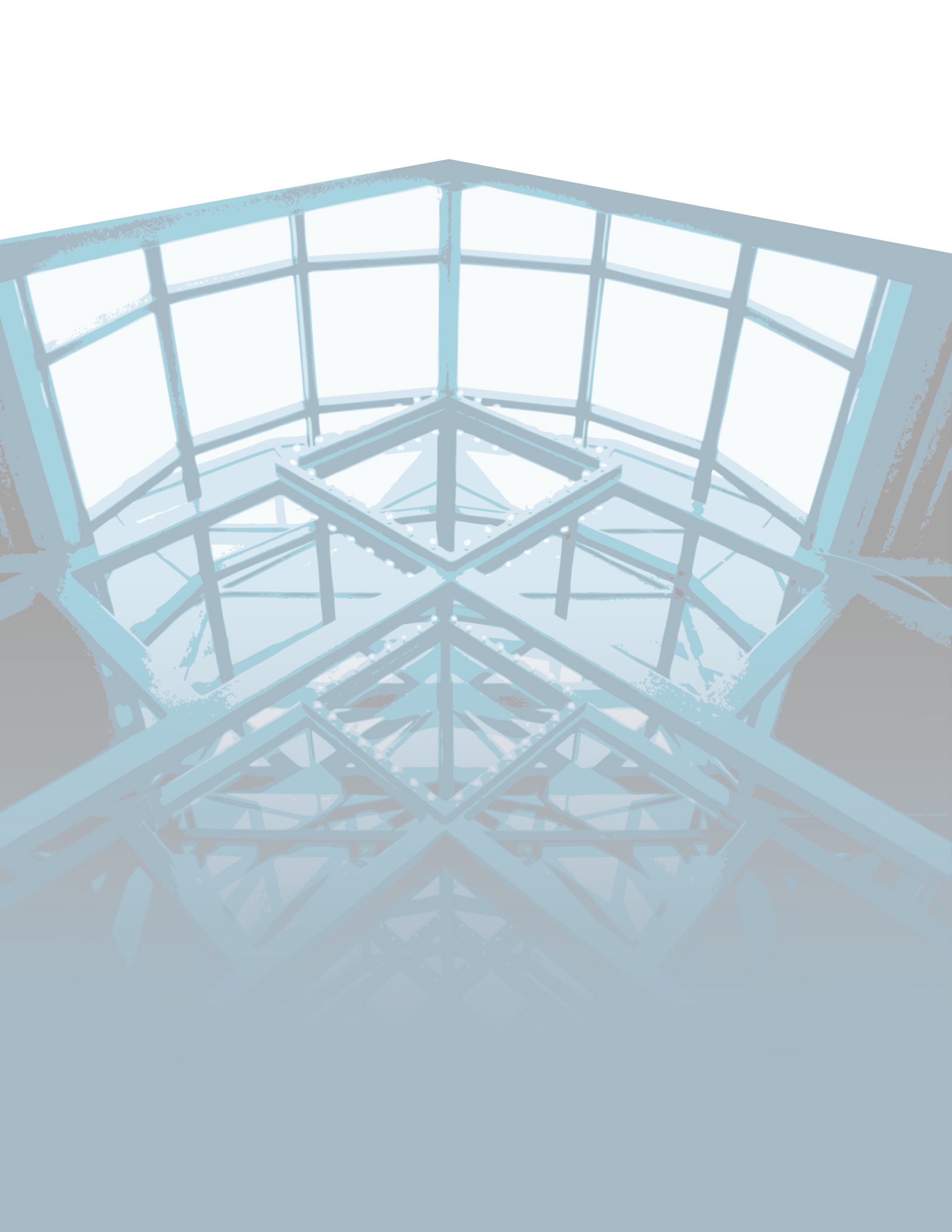


# A Framework for Patient-Centered Health Risk Assessments

Providing Health Promotion and Disease Prevention Services to Medicare Beneficiaries



Centers for Disease Control and Prevention  
Office of the Associate Director for Policy



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## Summary

In this report, we provide an evidence-informed framework for providers, policymakers, health plans, payers, researchers, and vendors on the implementation of patient-centered health risk assessments (HRAs), follow-up activities, and monitoring of progress toward achieving health improvement goals (referred to in the literature as the *HRA Plus* process). The Centers for Disease Control and Prevention (CDC) developed this framework on the basis of three recently conducted systematic literature reviews and expert input from physicians, researchers, members of medical associations, wellness program developers, and CDC subject matter experts. Expert opinion was used where the evidence base was limited. This framework is targeted at Medicare beneficiaries 65 years and older but can also be applied to younger beneficiaries. The CDC recommendations aim to achieve the following goals:

1. Provide guidance to providers offering clinical preventive care, health promotion, and disease management services on ways to use HRAs followed by evidence-based health improvement programs.
2. Ultimately, reduce health disparities through the use of HRAs and follow-up interventions that are linguistically and culturally tailored and are available to persons with disabilities.
3. Ultimately, improve health outcomes by identifying patients' modifiable health risks and providing follow-up behavior change interventions that are implemented over time.

The framework addresses the content and design of HRAs and the context of delivery.

## Introduction

Chronic illnesses account for an estimated 83% of total U.S. health spending and virtually all (99%) of Medicare's expenditures are for beneficiaries with at least one chronic condition. (1) Rising rates of certain chronic illnesses such as hyperlipidemia, hypertension, and diabetes—often caused by modifiable risk factors such as obesity—are not well managed (2-5), and are associated with significant spending increases, particularly for Medicare beneficiaries.(6, 7) Despite national health expenditures totaling \$2.7 trillion in 2011, many patients do not receive recommended preventive services and follow-up treatment. (8, 9)

Among adults aged 65 years and older, only 33% of women and 40% of men are up to date with all age-specific recommended preventive services (10), and fewer than a quarter of adults aged 50 to 64 years are up to date in receiving these services.(11) Further, detection, treatment, and control rates for common preventable conditions are deficient. For example, almost a third (31.3%) of U.S. adults have hypertension, but more than a fifth (22.4%) of adults with hypertension are unaware of their condition. Although two thirds of patients with high blood pressure (66.2%) are screened in a doctor's office and, of those diagnosed, two thirds (70%) are on medication, hypertension is controlled in fewer than half of diagnosed patients (46.6%).(12) For three decades, the top three leading causes of death in the United States have been, in order, heart disease, cancer, and stroke—all amenable to prevention efforts delivered to populations and individual patients.(13, 14) Effective primary prevention to avert disease, secondary prevention to detect illness early and intervene, and tertiary prevention to better manage acute and chronic



conditions are essential to improve the health and quality of life of Americans. Additionally, effective health promotion and disease prevention practices promise to reduce unnecessary healthcare utilization and increase the value in U.S. health spending.(15)

The Patient Protection and Affordable Care Act of 2010 (Affordable Care Act) included several provisions intended to improve the health of Americans and prevent the onset of preventable chronic conditions.(16) Section 4103 of the Affordable Care Act, the Medicare Coverage of Annual Wellness Visit Providing a Personalized Prevention Plan, establishes a Medicare Annual Wellness Visit beginning in 2011 that includes a Health Risk Assessment (HRA) and a customized wellness or personal prevention plan, without cost to beneficiaries (i.e., not subject to deductibles or co-pays).(17) This new benefit supplements the “Welcome to Medicare” preventive visit, a one-time, comprehensive assessment offered to beneficiaries within the first 12 months of enrolling in Medicare. The Annual Wellness Visit includes in part a medical history, the development of a preventive screening schedule, and personalized health planning. Section 4104 authorizes no cost sharing in Medicare for adult preventive services graded

“A” or “B” by the U.S. Preventive Services Task Force (USPSTF). The USPSTF-graded services are available at: <http://www.uspreventiveservices-taskforce.org/>.

As part of the Annual Wellness Visit, an HRA may be completed before, or as part of, a visit with a health professional who may be a physician, (as defined in section 1861(r)(1) of the Social Security Act), physician’s assistant, nurse practitioner, or clinical nurse specialist (as defined in section 1861(aa)(5) of the SSA or medical professional, [e.g., health educator, registered dietician, nutrition professional], or other licensed practitioner), or a team of such medical professionals working under the direction supervision of a physician. The law specifies that the HRA guidelines will be developed to provide that HRAs 1) identify chronic diseases, injury risks, modifiable risk factors, and urgent health needs of an individual; 2) may be furnished through an interactive telephonic or web-based program; 3) may be offered during the encounter with a healthcare professional or through community-based prevention programs, or 4) may be provided through any other means the Secretary determines appropriate to maximize accessibility and ease of use by beneficiaries, while ensuring the privacy of beneficiaries.

Other provisions of Section 4103 include 1) establishing standards for interactive, telephonic, or web-based programs used to furnish HRAs, and 2) determining ways of using the HRA in the formulation of a personalized prevention plan for beneficiaries. The law requires making available to the public an HRA “model,” ensuring that HRAs are easily accessible to beneficiaries, providing support to those wishing to complete HRAs, and publicizing the requirement that beneficiaries complete

an HRA prior to, or concurrent with, receiving personalized prevention plan services. The statute recognizes the critical nature of follow-up services by encouraging integration of HRAs with health information technology (HIT), including electronic medical records (EMRs) and personal health records (PHRs), and by leveraging these technologies in developing patient self-management skills and by the management of, and adherence to, provider recommendations as a means of improving the health of beneficiaries. Further, as part of the law, the U.S. Secretary of Health and Human Services is authorized to establish publicly available guidelines for an HRA, to be formulated in consultation with relevant groups and entities.

To inform practices related to HRA administration and follow-up services, the U.S. Centers for Disease Control and Prevention (CDC) is providing guidance to the Centers for Medicare and Medicaid Services (CMS) and to healthcare providers, health promotion vendors, and other professionals wishing to improve the implementation of these services. The guidance is

intended to inform the development of HRAs and is not mandatory. This guidance report is informed by recent systematic reviews of the evidence related to HRAs, interviews with experts in the field, CDC internal subject matter experts, and public input received in response to a *Federal Register Notice* about this provision in the law. HRA experts, members of medical associations, clinicians, and researchers offered their opinions on the HRA recommendation topics and construction at a public forum hosted by the CDC in February 2011.

This report addresses the use of HRAs, in conjunction with follow-up counseling, coaching, and behavior change interventions that make up the personalized prevention plan, aimed at improving the health and well-being of Medicare beneficiaries. The recommendations contained here may also be applied to a non-Medicare population, including privately insured adult individuals in both the individual and group markets, when an HRA and follow-up interventions are used to promote health and prevent disease (Table 1).

**Table 1. Framework for Patient-Centered Health Risk Assessments—Recommendations**

1	Balance comprehensiveness of assessment with provider and patient burden
2	Build upon high priority questions
3	Use person-centered and culturally appropriate processes
4	Comply with all federal laws and regulations regarding access for persons with disabilities
5	Use a shared decision-making process
6	Offer training to health providers
7	Offer action-oriented information
8	Use principles of quality improvement
9	Incorporate information into secure electronic health records
10	Conduct research to quantify long term outcomes

The recommendations offered are not meant to be prescriptive. They recognize that the content and process of the Annual Wellness Visit that includes the HRA as part of the personalized prevention plan will undergo updating as new evidence and innovations emerge.

## Purpose

The recommendations presented here aim to achieve the following goals:

1. Provide guidance to providers offering clinical preventive care, health promotion, and disease management services on ways to use HRAs followed by evidence-based health improvement programs.
2. Ultimately, reduce health disparities through the use of HRAs and follow-up interventions that are linguistically and culturally tailored and are available to persons with disabilities and other underserved populations.
3. Ultimately, improve health outcomes by identifying patients' modifiable health risks and providing follow-up behavior change interventions.

## Use of HRAs and Follow-Up Interventions as Part of the Medicare Annual Wellness Visit

The Annual Wellness Visit is intended to keep Medicare beneficiaries healthy, or help Medicare beneficiaries become healthier, by promoting positive health habits and a healthy lifestyle. Unlike much of medical care, which is primarily directed at treating acute and chronic illnesses, the Annual Wellness Visit aims to prevent the onset of disease and disability or to slow

the progression and exacerbation of existing illnesses. The Annual Wellness Visit can highlight behaviors and lifestyle choices that beneficiaries can adopt to keep them from getting sick or sicker, and to improve their quality of life and day-to-day functioning. In this regard, the preventive focus of the Annual Wellness Visit is contrasted with many typical healthcare services, which are largely focused on treating exacerbations of existing diseases.

The Annual Wellness Visit is to encourage individuals to take an active role in accurately assessing and managing their health, and consequently improve their well-being and quality of life. This refocusing on an individual's active role in health care is accomplished by evaluating beneficiaries' current health and wellness behaviors, followed by advice and counsel on ways to become healthier and remain healthy for as long as possible.

The tools available to the practitioner to accomplish this purpose include administering an easy-to-use HRA with feedback, along with providing credible information, advice, resources, and support that will raise patients' awareness of their individual health issues, promote self-reliance and self-care, prompt active decision-making, and increase confidence to manage one's health. Thus, a main purpose of the Annual Wellness Visit is achieved by collecting information relevant to effective patient engagement and providing feedback to the patient that is welcome by the patient and is actionable.

## Defining the HRA Plus Process

An HRA involves collecting and analyzing health-related data used by health providers to evaluate the health status or health risk of an



**Table 2 . HRA Plus Process**

1	HRA completed
2	Feedback received
3	Shared decision making to develop goals and prevention plan
4	Referrals provided
5	Progress monitored
6	Follow-up regularly

individual.(18) HRAs are designed to do more than just evaluate risk for disease or disability, which is why experts in the field often prefer the terms “health assessment” or “wellness profile” to avoid the negative connotation associated with “risk” assessment.<sup>1</sup> Evidence-based HRA and follow-up services can include the following: identifying and encouraging salutary behaviors as well as discouraging detrimental activities; employing biometric testing and clinical screening to provide biological evidence of health status; and supporting disease self-management through education and coaching. HRA administration itself is only one component of a broader practice of engaging patients in their own health improvement efforts and the choices they make related to their health (Table 2).

More generally, an evidence-based *HRA Plus* process has included these elements: assessment of personal health habits and risk factors, often supplemented with biometric measurements of physiologic health; quantitative estimation, or qualitative assessment, of future risk of death or adverse health outcomes; and a mechanism for providing feedback in the form of educational messages or counseling on ways to change behaviors and health habits to potentially alter one’s risk of disease or pre-

ture death.(19)

The *HRA Plus* process can include administering an HRA intended to identify behavioral and biometric health risks that may negatively affect health; providing patients with advice from clinicians on the consequences of these health risks; and in developing a personal prevention plan that includes goal setting, coaching, referrals, and monitoring. Effective implementation of the Annual Wellness Visit can be enhanced through providing technical assistance to users (payers, providers, and patients) (20), reimbursement models that reward care value over care volume (21), improved quality assurance methods, and reliable metrics.(22)

As the initial step in the Annual Wellness Visit personalized prevention plan, HRAs can play an important role in raising awareness of health issues and motivating behavior change among patients by intentionally creating “teachable moments” that may inspire health improvement. In addition to encouraging behavior change, an HRA can serve as a vehicle for directing individuals into risk-appropriate interventions and can allow for providers to track changes in the risk profile of individuals, groups of individuals, and patient panels over time. Triaging people and tracking changes, in turn, allows medical and health promotion practitioners to measure individual progress and the overall impact of interventions.

<sup>1</sup> For the sake of consistency, we use the term HRA in this report when referring to a health assessment or wellness profile.





HRAs, however, do have limitations and methodological concerns. For example, individuals may provide inaccurate information due to recall bias, reticence about reporting socially unacceptable behaviors, or a lack of understanding of health risk questions. In addition, existing HRAs may not be tailored to specific literacy, cultural or age groups, and they can have poor validity and reliability, thereby generating inconsistent results.(23)

Notwithstanding the limitations inherent in self-report of health and health risks, there are distinct advantages to the use of HRAs for health promotion purposes. The Community Preventive Services Task Force, an independent, nonfederal, volunteer body, appointed by the Director of the CDC, whose members represent a broad range of research, practice, and policy expertise in community preventive services, public health, health promotion, and disease prevention, recently reviewed the literature on worksite health promotion programs that

use HRAs. The Task Force review distinguished between two types of HRA applications: an assessment of health risks with feedback, when used alone, (“*HRA Alone*”), and an assessment of health risks with feedback as a gateway to more intensive and prolonged health promotion and risk reductions interventions (referred to as *HRA Plus*). The review found the *HRA Plus* process to be more effective in changing some health behaviors when compared to the use of the HRA alone.

As defined in the literature, the *HRA Plus* process begins with the administration of an HRA, which is then followed by health education (multiple sessions often lasting longer than one hour); enhanced access to physical activity programs and healthy eating choices; and introduction of policies and environmental changes in the workplace to improve health, such as smoking restrictions, offering healthy snacks in vending machines, and use of incentives and competitions.(19) The *HRA Plus* process is associated with better outcomes when compared to use of an HRA with feedback alone.

As noted earlier, at a minimum, the *HRA Plus* process begins with administration of an HRA producing a feedback report that forms the foundation of a personal prevention plan. Expert opinion provided in the development of these recommendations indicated that the *HRA Plus* process is most effective if it includes these complementary components:

- Multiple or serial administrations of HRAs, with feedback provided over time to patients on their health and risk status.
- Ongoing health education programs provided through pamphlets, books, videos, or interactive computer programs.

- Motivational interviewing, counseling, and coaching provided face-to-face or telephonically to support behavior change and risk reduction.
- Referral to community resources such as fitness facilities, self-help support groups, or neighborhood volunteer programs.
- Referral to local or national health promotion vendors and services such as smoking quit lines and wellness coaches.

An earlier RAND report on HRAs and Medicare, conducted for CMS, reported improvements in health outcomes such as blood pressure, weight, physical activity, and general health status from *HRA Plus* interventions.(24) The more recent Community Guide Task Force report concluded that comprehensive, well-resourced, and theory-based programs employing HRAs and follow up exert a positive influence on certain health behaviors and biometric measures. In contrast, insufficient evidence was found to determine the effectiveness of *HRA Alone* programs (i.e., just the administration of an HRA with feedback).(19)

Specific findings from the *HRA Plus* review noted that there was *strong* or *sufficient* evidence that comprehensive programs can reduce rates of tobacco use, dietary fat consumption, seat belt nonuse, high blood pressure, total serum cholesterol levels, and high risk drinking. The review also found improvements in participants' physical activity, overall health and well-being scores, and healthcare use, when measured in terms of reduced hospital admissions and hospital days of care. For general risk reduction, the majority of the effects estimates were in favor of the *HRA Plus* and of moderate size. In contrast, insufficient evidence was found in the *HRA Plus* review to determine the effectiveness

of the programs leading to changes in body composition and fruit and vegetable consumption. (19)

The RAND report found some positive changes in health behaviors with use of health promotion programs. Most of the research participants were working-aged adults. Of the research that focused on older adults, many of the studies showed significant benefits in combining HRA with participation in a health promotion program.

In addition, *HRA Plus* programs directed at the under 65-year-old population use principles and techniques that would also apply to seniors and can be tailored to meet the needs of older persons. This evidence suggests that *HRA Plus* has a high potential to achieve similar effects related to risk reduction and lower utilization of healthcare services in the Medicare population. A test of this hypothesis is currently under way in a federally sponsored demonstration initiated by CMS entitled Senior Risk Reduction Demonstration, begun in 2007 and scheduled to be concluded in 2012.(26)

As underscored by the Task Force on Community Preventive Services report and previous reviews on this topic, the administration of an



HRA alone rarely produces long-term behavior change.(19, 26, 27) Although HRAs inform individuals about health issues and raise awareness about what constitutes healthy or unhealthy behaviors, further support is required to gain the necessary skills to try out new health habits and make them an integral part of one's day-to-day routine. Consequently, the administration of an HRA should be thought of as a first step in a comprehensive framework of behavior change and risk reduction.

In recent years, HRAs have evolved so that they do more than predict the likelihood of dying from a certain illness within a given timeframe. Current HRAs carefully assess one's risk of negative health outcomes, readiness to change certain behaviors, confidence in doing so, and the relative pros and cons for initiating behavior change. This information can then be by health providers as part of the *HRA Plus* process to motivate and maintain a health promoting lifestyle. Underlying contemporary HRAs are constructs derived from behavior change theories.(28-33)

Evidence-based HRAs provide feedback designed to correct patients' inaccurate perceptions of their own risk.(34) Providing this feedback to patients allows them to more accurately assess the likelihood of future health problems, which most individuals underestimate, particularly intrinsic or self-imposed risks (e.g., cigarette smoking) as opposed to extrinsic threats (e.g., environmental health hazards). According to the same literature, HRAs also need to provide feedback on behavior change priorities established across the following five dimensions: epidemiologic risk, readiness to make behavioral changes, self-efficacy, quality-adjusted life years (QALYs), and gateways to behavioral change. (35-37)

Epidemiological risk is defined as the likelihood of morbidity and mortality risk given certain biometric measures, behaviors, demographic information, and family history. Readiness to change assesses the individual's willingness to commit to certain actions aimed at improving health within a given time horizon. Self-efficacy refers to the extent to which one feels confident that he or she can successfully modify a behavior or habit. Researchers have shown that self-efficacy is associated with a person's motivation in making lifestyle or behavior changes and his or her ability to manage disease.(38) Quality-adjusted life years take into account one's experience of living, given the addition of years to life. Finally, a gateway to behavior change refers to the likelihood that committing to a certain behavior change will "open the gate" to trying out other behaviors that improve health.

Underlying these ideas is the need to tailor the information to the particular characteristics of the HRA participant, considering such factors as motivation and ability to change behaviors, as well as the barriers to change, and ways of overcoming those barriers. Experts agree that to induce people to change their behaviors, health education interventions occurring multiple times and for periods longer than one hour each time are more effective.(19, 27, 39)



Thus, although the HRA is useful for inspiring behavior change, it requires feedback that is engaging and easy to understand and follow-up interventions necessary for skill building, developing new health habits, and maintaining behavior change.(23, 39) As Woolf et al. have pointed out, by asking, educating, and counseling, health professionals are more likely to assist individuals in modifying health behavior and preventing future disease than by administering tests or physical examinations.(23)

Provider feedback and support helps individuals gain the skills to change high-risk behaviors and then incorporate those skills as part of their day-to-day routine. HRAs can be the initial step of a personalized prevention plan framework that supports successfully acquiring and maintaining healthy behavior and reducing risks. The evidence suggests that to reach a teachable moment the provider should engage in a process of shared decision-making with the patient. In shared decision-making, providers engage patients to discover what is important to the patients, assess patients' motivation to change behavior, and set mutually agreed upon health goals. This shared decision-making can be achieved through a process called motivational interviewing. In motivational interviewing, the provider offers information personalized for the patient and delivers the information in an easily understandable manner. Subsequent tasks are setting priority goals, developing a clear plan, and setting a timetable for follow-up.(39)

### **Use of HRA Plus Services**

Successfully implementing the recommendations in this report can advance population health promotion and disease prevention in line with nine of the 40 topic areas included in

the *Healthy People 2020* Goals document: heart disease and stroke; injury prevention; nutrition and weight management; older adults; physical activity; sleep health; substance abuse; tobacco use; and health-related quality of life and well-being.(40)

### **History of Health Risk Assessments**

Dating to the fifth century B.C., the Hippocratic tradition emphasized prognostication and prevention, using patient-centered regimens of dietetics and exercise to maintain or regain health.(41) But it was not until 1968 that a system for appraising health hazard of individuals was first proposed in the practice literature as a component of comprehensive healthcare. Developed through a pilot study initiated in 1963, the method used a four-part rubric to assist physicians in assessing and mitigating adult patients' health risks: basic average health hazards by age, sex, and race over a 10-year period; health hazards for the individual, reflecting history and physical examination, routine tests, and specialized tests and consultations; factors for adjusting individual health hazards; and individualized preventive medicine programming reflecting the whole-person concept.(42)

In 1970, a manual for physicians, *How to Practice Prospective Medicine*, provided a sample HRA questionnaire, risk computations, and a feedback strategy.(43) Although the medical profession did not generally adopt HRAs, instruments proliferated elsewhere, most notably through workplaces and community-based health promotion programs.(44) In 1980, CDC released publicly available HRA software that used a 31-item, self-administered questionnaire to compute adult health risk.



In 1986, CDC collaborated with the Carter Center of Emory University in Atlanta to review the scientific basis for individual HRAs and began a program to distribute HRA software through state public health programs.(45) At the end of that project, the HRA program was transferred to the Atlanta-based Carter Center, where it continued until 1991. At that time, a nonprofit corporation, Healthier People Network, was established to keep the HRA in the public domain.(46) Now, more than 40 years following publication of the first method of performing a clinical health assessment, HRAs are accepted processes to identify an array of risk factors associated with developing specific acute or chronic disease conditions. Further, it offers providers a tool for recommending clinical preventive screenings and treatment to support patients' health improvement efforts.

Although the HRA was originally developed as a hand-tallied instrument to collect health risk data from individuals to produce a personalized epidemiological-based profile predicting future mortality, it has since evolved into an interactive electronic tool that provides a personal health assessment score such as a "health age," tailored educational messages, on-line modeling of the effects of making lifestyle changes, goal setting guidance, and other resources to motivate behavior change and achieve risk reduction.(23)

Barriers for effectively implementing the *HRA Plus* process include skepticism about the effectiveness of HRAs and follow-up counseling; inadequate reimbursement rate for health promotion services; lack of time on the part of clinicians and patients; and the traditional medical focus on testing and procedures.(23) Another barrier to the widespread use of HRAs is that no standards exist for developing HRAs or their infrastructure, despite the proliferation

of various tools and programs for working-age adults included in employer-sponsored health promotion programs. This report is written to inform medical professionals and health promotion practitioners on the current state of the evidence in the field of HRA as well as to provide a framework of personalized prevention plan practices in a "real world" setting.

## **Methods: The Development Process**

Krist and Woolf describe a five-phase health assessment process. In phase I, patient information is collected in a uniform, standard fashion through an HRA administered before the physician visit, preferably at home. In phase II, patient information is integrated with an office-based electronic medical record (EMR) or personal health record (PHR), or claims data, or both. In phase III, clinical findings and HRA information are translated into language the patient can understand alongside counseling and coaching. In phase IV, the patient receives individualized clinical and risk-reduction recommendations, including screening reminders, based on the patient's risk profile and evidence-based guidelines. Finally, in phase V, the patient is provided vetted health information resources that facilitate informed decision-making about one's health and well-being, including links to websites and referrals to community health promotion programs, to help make and continue life-altering changes in health habits and lifestyle.(47)

Using the previously mentioned framework and information derived from three systematic reviews of HRA-based health promotion interventions (Oremus, et al. [2011], Soler, et al. [2010] and Shekelle, et al. [2003]), CDC staff identified the following salient domains for the *HRA Plus* process: content, mode of administra-

tion, provider capacity, quality assurance, and monitoring and evaluation. To CDC's efforts, Partnership for Prevention and Thomson Reuters identified experts in the fields of HRA research, development, and administration. Interviews were conducted with these experts related to the above domains. The experts interviewed are identified along with their affiliations are acknowledged. Some of these experts were also invited to serve as panelists at a two-day public forum, held at the CDC in February 2011. Information gained from the expert interviews, public forum meeting, and responses to a *Federal Register* notice were considered by CDC.

The following recommendations are based on the evidence reviews, and where the evidence was inconclusive or insufficient, on expert opinion, including those opinions that were sought out as well as those provided during the public forum session and received from the *Federal*



*Register* Request for Information. Additionally, an internal CDC workgroup was identified to provide evidence and advice on individual HRA questions and interventions. The information provided by these CDC subject matter experts was considered to ensure that suggested HRA questions were either validated or in other commonly used HRAs, or both, and that those questions that were answered positively would have evidence-based interventions to address those identified health risks. CDC staff organized the framework into the following nine areas: 1) comprehensiveness; 2) question uniformity; 3) person-centeredness; 4) modes of administration; 5) shared decision-making; 6) primary care capacity and support; 7) feedback and follow-up to patients; 8) quality assurance; and 9) electronic data management.

The review also considered the parallel multi-stage process the National Institute of Health (NIH) and the Society of Behavioral Medicine (SBM) recently employed focused on behavioral and psychosocial HRA data elements to be embedded in EHRs and PHRs. (Proceedings are found at: <http://conferences.thehillgroup.com/OBSSR/EHR2011/resources.html>).

Three comprehensive evidence reviews related to the use of HRAs determined that use of an HRA can be effective in identifying high-risk health behaviors and that a follow up process that includes provision of interventions to address the behaviors identified and regular monitoring of progress can enhance the effectiveness of interventions (referred to here as *HRA Plus*).<sup>(19, 24, 27)</sup> The evidence varied somewhat in terms of which health outcomes were affected; however, the evidence was supportive of positive health outcomes, at least in the short term. Most of the studies were directed at working age adults and not

older populations. In addition to determining that many common HRA questions apply to any age adult group (e.g., questions related to smoking, nutrition, and physical activity), we also considered expert opinion in determining which questions would be applicable to older individuals (e.g., questions that assess activities of daily living).

Although the *HRA Plus* process has sufficient evidence of the effectiveness of interventions on short-term health outcomes, the specifics of that framework for delivery are not yet standardized. Therefore, we relied on the best available evidence and expert opinion to determine our recommended options for the delivery of this program in a clinical context touching upon such topics as mode of administration, provider capacity, data management, and program evaluation. Although interventions that combine HRA feedback with the provision of health promotion programs are the interventions most likely to show short-term beneficial effects, it is not known if these effects persist over the long term. The final recommendation for additional research to determine whether these effects persist over the long term will help to fill the gaps in the evidence.

## Recommendations

**Recommendation 1 for HRA Developers and Payers**—The *HRA Plus* process should balance comprehensiveness of health assessment with health provider and patient burden.

### Comment

As noted previously, time constraints, the abundance of possible risk factors that could be addressed in the Annual Wellness Visit, and a lack of confidence on part of many providers that long-term health habits are amenable to



change all stand in the way of effective administration of an *HRA Plus* intervention. Thus, the questions contained in an HRA should be limited in scope and prioritized, with a capability to tailor and drill down with additional queries depending upon patients' responses and health status and provider's judgment. A general rule is that it should take no more than 10–20 minutes for patients to complete the HRA in order to achieve high compliance rates. (48) Limiting the instrument to high-priority items will ensure that the most pertinent and impactful questions are asked and that patient participation is maximized.

Consequently, a key consideration for how the *HRA Plus* is structured is the burden it places on providers and patients in terms of time and complexity. The current variation in risk assessment tools increases the burden on providers and staff. HRAs are most useful in unearthing health and medical information that only the patient can provide, for example exercise habits, diet, depression, and an overall assessment of one's health status. The HRA should supplement and complement data collected through other means including physical examination, laboratory testing, and screening history. Ideally, information related to patient demographics, biometric values, medical history, and preven-



tive service use can be prepopulated in the HRA from the existing medical record. This information could be populated by electronically linking the HRA with electronic medical record or personnel health record data when these instruments are embedded into a physician's office practice. Today, only a minority of medical practices have instituted electronic data transfer that allows for seamless movement of data across data repositories. (20) HRAs used in most clinical practices remain independent of other data systems. In the future, integration of routinely collected data into HRAs can lessen the burden of completing many parts of the survey where information is already available from other sources.

**Recommendation 2 for HRA Developers, Health Providers and Payers**—The *HRA Plus* process should be consistent with the Health Risk Assessment definition established by CMS (42 CFR 410.15) for the Medicare program. This framework suggests one model for implementing the definition through a suggested set of questions. However, as CMS noted in finalizing the definition, there is not only one type of HRA that will meet this CDC framework. Various HRA instruments can meet the Medicare definition.

### Comment

In this framework document, we offer one HRA model as an example of the type of HRAs that could be administered as part of the Annual Wellness Visit. The appendix contains one HRA model. The questions reflect available scientific evidence and the input of experts consulted in the development of this guidance. Use of this model is not a requirement for the Medicare Annual Wellness Visit HRA, as a variety of HRA instruments will meet the Medicare HRA definition.

The questions in this model are anchored in the Behavioral Risk Factor Surveillance System (BRFSS) interview protocol that CDC fields annually and in previously used and widely available validated HRA instruments, including the one CDC originally developed.<sup>(45)</sup> Additionally, standard items recommended by the NIH and SBM body discussed above were considered in the formulation of this example. The sample questions contained in the appendix are designed to be administered to patients in written form (as text, electronically, or in a paper-based format), rather than through an interview process. To help ensure a valid response, they are purposely short, easy to understand, and straightforward in terms of the questions themselves, and response options. It is anticipated that responding to these questions will take no longer than 20 minutes, on average.

Note, that in most cases, an HRA will be completed by the person (or caregiver as necessary) prior to the office visit via internet, phone or paper-based linguistically and culturally appropriate HRA tool. When the HRA is completed in the office as part of the Annual Wellness Visit, provider staff may assist the person in completing the instrument.

In subsequent visits, the person (or caregiver as necessary) can review the previous results and indicate whether each question response is unchanged from the previous HRA or indicate a new response, as appropriate.

The sample questions in this report are similar to those included as part of the CMS Senior Risk Reduction Demonstration, which uses the HRA as the foundation for a health promotion program directed at Medicare beneficiaries:

- Demographics and limited family/personal health history.

- Self-assessment of health status, frailty, or physical/mental functioning.
- Biometric measures (when these data are not readily available from laboratory results or medical records): e.g., overweight and obesity (height/weight, body mass index (BMI), waist circumference<sup>2</sup>) (50), hypertension (systolic/diastolic blood pressure), blood lipids (HDL/LDL and total cholesterol, triglycerides), and blood glucose (blood sugar and hemoglobin A1c levels).
- Psychosocial risks: e.g., depression/life satisfaction, stress/anger, loneliness/social isolation, and pain/fatigue.
- Behavioral risks: e.g., tobacco use, inadequate physical activity, poor nutrition or diet, excessive alcohol consumption, prescription drug use for nonmedical reasons, and motor vehicle safety.
- Compliance with current screenings, chemoprophylaxis, and immunization guidelines established by the USPSTF and ACIP (when this information is not available from the EMR or PHR).<sup>3</sup>

2 Waist circumference has been shown to be an independent risk factor for Type 2 diabetes, dyslipidemia, hypertension, and cardiovascular disease in patients who are in the normal or overweight category (i.e., those with a BMI of 30 or less); however, there are ethnic and age-related differences in body fat distribution that modify the predictive validity of waist circumference.

3 Questions related to compliance with screenings, chemoprophylaxis, and immunizations that receive an 'A' or 'B' recommendation from the USPSTF or a positive ACIP recommendation. An 'A' recommendation indicates a high certainty that the net benefit is substantial, and a 'B' recommendation indicates a high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.

### Recommendation 3 for Health Providers

—The *HRA Plus* process should be person-centered and culturally appropriate, including the HRA instrument itself, its administration, provider feedback to patients on the basis of HRA findings, and follow-up and monitoring interventions.

#### Comment

Providers who offer *HRA Plus* interventions should employ a patient-centered approach in which treatment options take into account the patient's perspective. This "person-centered" model acknowledges that important care support services are provided outside the healthcare system, by family members, in the community, or at the workplace where individuals receiving services are not "patients". Person-centeredness is closely associated with cultural competency, which aims to reduce health disparities by respecting individuals' beliefs, understanding the bio-psychological context in which they experience illness and health, and developing a collaboratively set health plan. Person-centered care involves concepts important to consumers, such as convenience, and focuses on outcomes they value, such as improved quality of life and functioning.<sup>(51)</sup>

### Recommendation 4 for HRA Developers, Health Providers and Payers

—The modes of HRA administration should comply with all applicable federal laws and regulations related to access for persons with disabilities. The modes should facilitate maximum use by providers and patients.

#### Comment

Access to a meaningful HRA requires accommodations for individuals with physical, sensory, and cognitive limitations. For patients with low vision or blindness, alternative formats such as large

print, versions in Braille, or audio administration may be required. Access to HRA materials and documents should be in compliance with the Office for Civil Rights; Title VI of the Civil Rights Act of 1964; Policy Guidance on the Prohibition Against National Origin Discrimination as It Affects Persons With Limited English Proficiency.(52) Section 508 of the Rehabilitation Act of 1973 and Rehabilitation Act Amendments of 1998 mandate that all software developed by federal agencies allow access to and use of information and data by individuals with disabilities.(53)

As noted previously, HRAs were first introduced in a paper-based format. However, the evolution of technology has prompted new modes of administration that include Internet, kiosks located in physicians' offices or pharmacies, telephone IVR, automated touch-tone telephone assessments, personal digital assistants (PDAs), and other self-administered electronic tools accessed online.

Computerized, online secure HRAs are particularly attractive because they involve low-cost data collection, processing and reporting, and, in most cases, rapid, if not instantaneous, feedback of results. (23) Another advantage of online HRAs is that respondents complete the surveys at their own pace and at a time convenient to them. Moreover, online or Internet-based HRAs allow for automatic skip patterns in the questions, so that patients only receive questions relevant to their circumstances based on responses to previous items. If implemented correctly, online HRAs also enable patients to access their previous results, or health history, or both, and track their progress over time. Further, electronic HRA data can be linked to PHRs and EMRs containing clinical and administrative information. Finally, HRA respondents

who fill out the questionnaire online can be directed to a wide range of health resources available over the Internet or in the community.

Administering the HRA online can make physician-patient interactions more focused and efficient. When patients complete their computer-assisted HRAs before visiting the doctor's office, the physician can review the patient's health risk profile in advance or during the medical consultation, thus saving the time it would take to complete the assessment in the provider's office.

Ease of administration and lower costs should not, however, trump accessibility to the HRA. Although the Internet is vital for sharing information, some patients may lack reliable access, either because they do not have a web connection or are unfamiliar with computers and information technology.

For respondents with limited access to technology, or trepidation about using it, having other modes of HRA administration available, such as paper-based, is critical.

Phone interviews and IVR devices for gathering data may help patients who have disabilities, such as blindness. When a telephonic process is used to complete the HRA, the questions need to be structured more simply than would be the case in a paper or computer screen format because of the difficulty of remembering questions and response options.

#### **Recommendation 5 for Health Providers—**

Through a shared decision-making process, providers and patients can prioritize interventions to reduce high-risk behavior, or improve self-management of existing disease.

## Comment

The *HRA Plus* process should support shared decision-making between patient and practitioner by first gathering relevant information from the patient and then using that information to prompt productive communication leading to action. Shared decision-making should address mutually agreed upon ways the patient can improve health, driven by the patient's health risks, willingness to adopt specific health improvement behaviors, confidence in the patient's ability to affect change, and the availability of tools and resources to support such change. Focusing on what matters most to the patient is critically important and more likely to elicit behavior change.<sup>(39)</sup> Decision-making should take into account areas that the patient deems critically important, as well as, high-priority health risks, underscoring the importance of a robust discussion between patient and provider.

A shared decision-making process helps the patient work through ambivalence about changing what may be life-long habits and involves the patient in making a commitment to action by vocalizing reasons to or not to change. In addition to promoting patients' clear understanding of their health risks, the HRA should evaluate self-efficacy. Self-efficacy identifies the level of people's confidence that they can make the recommended lifestyle or behavior changes. Self-efficacy has been shown to be associated with patients' motivation in making lifestyle or behavior changes and their ability to manage disease.<sup>(37)</sup>

Operationally, shared decision-making is achieved through motivational interviewing <sup>(39)</sup> where information is communicated to the patient in a personalized and collaborative manner, the information is repeated by the patient to ensure comprehension, and priority setting is done with a clear timetable for follow





through. Other elements of shared decision-making include self-formulated and realistic goal setting; self-monitoring; establishment of support systems; and ongoing feedback discussions with the provider. Patient-provider discussions may uncover barriers to change that include physical pain, emotional difficulties, financial concerns, and lack of confidence in one's ability to change. These and other barriers can then be addressed in a conversation between the patient and provider so that a realistic personal prevention plan is formulated with specific and achievable outcomes.

**Recommendation 6 for Key Stakeholders—**Health provider associations, government agencies, and medical schools should provide leadership in the uptake of the *HRA Plus* process.

### Comment

Due to their enhanced capacity, practice innovations are more easily implemented in large highly integrated healthcare systems; however, those systems make up a small percentage of the primary care structure in the United States. In 2005–2006, 75% of office-based primary care physicians in the United States were in solo or single-specialty practices, and 23.9% were in multispecialty groups.<sup>(54)</sup> Nearly half (48.9%) of office-based primary care physicians deliver care in one to two physician practices and about a third (35.2%) do so in solo practice.<sup>(54)</sup> Smaller practices have limited time and resources to implement the changes required to support new paradigms of care such as *HRA Plus*. Although some physicians may probe on a small subset of “HRA-type” questions during regular office visits, such as patients’ smoking status, and record this information in the patient record, most do not routinely administer HRAs, and face challenges in investing in equip-

ment, software, or staff needed for effective *HRA Plus* implementation.<sup>(23)</sup> This framework suggests strategies that can be easily implemented with or without additional equipment, software, or staff.

For physicians in small practices to embrace the *HRA Plus* model on a wide scale, they will need evidence that adoption of that model will lessen their workload, improve patient health, and not interfere with normal office workflow.<sup>(23)</sup> It is anticipated that the evidence-informed framework identified in this report will lessen physicians’ workload, including improvement in normal office workflow, through use of HRAs and follow-up activities. The evidence provided in this report suggests positive impacts on some health behaviors can ultimately improve patient health.

The *HRA Plus* process will likely support the aims of the Medicare Shared Savings program described in Section 3022 of the Affordable Care Act, establishing Accountable Care Organizations, the payment bundling pilot specified in Section 3023, the Independence at Home demonstration created by Section 3024, and the care transitions program created in Section 3026. The *HRA Plus* process will also reinforce the work of community health teams specified in Section 3502, whose aim is to provide follow-up health and disease management services locally. In that arrangement, the physician will continue to act as the initiator of care coordination and an essential “linchpin” to the *HRA Plus* process.

Follow-up care can be delivered using other resources or “physician office extenders.” Under the direction of the physician, these “extenders” might include trained wellness coaches, dietitians, nurses, mental health/social workers, psychologists, clinical pharmacists, medi-

cal assistants, or patient navigators working in coordination with the physician. They may be part of a larger organization that provides centrally administered HRAs and feedback reports, counseling and coaching services, behavior change educational seminars, on-line health improvement programs, and community resource and referral services. These specialists may be located locally or in other parts of the country where services are delivered by mail, telephone, or computer. Other methods for broadening the physician's reach beyond a one-on-one patient encounter include the use of email, group visits, and telephone. For Medicare beneficiaries, current policies and regulations apply.

Because patients trust their physicians or health providers they are more likely to act upon the referrals and recommendations they receive from them.

Because of the predominance of smaller practices with limited resources, physicians and staff would benefit from training, technical assistance, and support. Training for primary care physicians, nurse practitioners, and physician assistants can be provided by national health provider associations, health plans, medical schools, and other entities. To facilitate the adoption of the *HRA Plus* process, continuing medical education (CME) credits could be made available for participating in training and the training organizations may then follow-up with additional technical assistance. Technical assistance can also be provided by commercial health promotion vendors, health plans, local community health teams, and public health departments.

Some providers who administer HRAs and feedback reports may require enhanced training and technical assistance to gain fluency in the use of

these tools. Thus, medical practices may need assistance from HRA developers, in partnership with professional groups and other stakeholders, to train office staff on technical issues (data input/transfer/integration with EMR/PHR data) and health education elements of *HRA Plus*. Importantly, physicians and staff may need help in understanding the content of HRA questionnaires, how to interpret HRA feedback reports, and how to coordinate efforts with community and external resources. They may require training on how to navigate through the electronic data transfer process and on how to best use reports as part of a typical patient encounter.

A new paradigm of primary care, as outlined by Bodenheimer, includes developing clinical teams; open access scheduling; implementing new models for managing chronic care; training patients in self-care; and using group medical visits.<sup>(55,56)</sup> Primary care practice teams with well-defined leadership, effective teamwork, well-structured appointment and visit systems, and well-planned follow-up and coordination of care after the visit, are associated with better control of risk factors for cardiovascular disease in patients with diabetes.<sup>(57)</sup> In addition, improved quality of care has been associated with increased survival in vulnerable older patients.<sup>(58)</sup>

Physicians are also encouraged to develop electronic "file drawers" of services available in the community and elsewhere that address the risk factors that are the focus of *HRA Plus*. Those services include, where established, local Area Agencies on Aging and Aging Disability Resource Centers.<sup>(26, 27)</sup> Other community support functions may include home delivered meals, transportation for shopping, program eligibility and benefit counseling, translation services, respite care, and fitness programs.

**Recommendation 7 for Health Providers, HRA Developers, and Payers**—Ensure primary care practices offer action-oriented information to patients from the *HRA Plus* process to support adoption of follow-up recommendations.

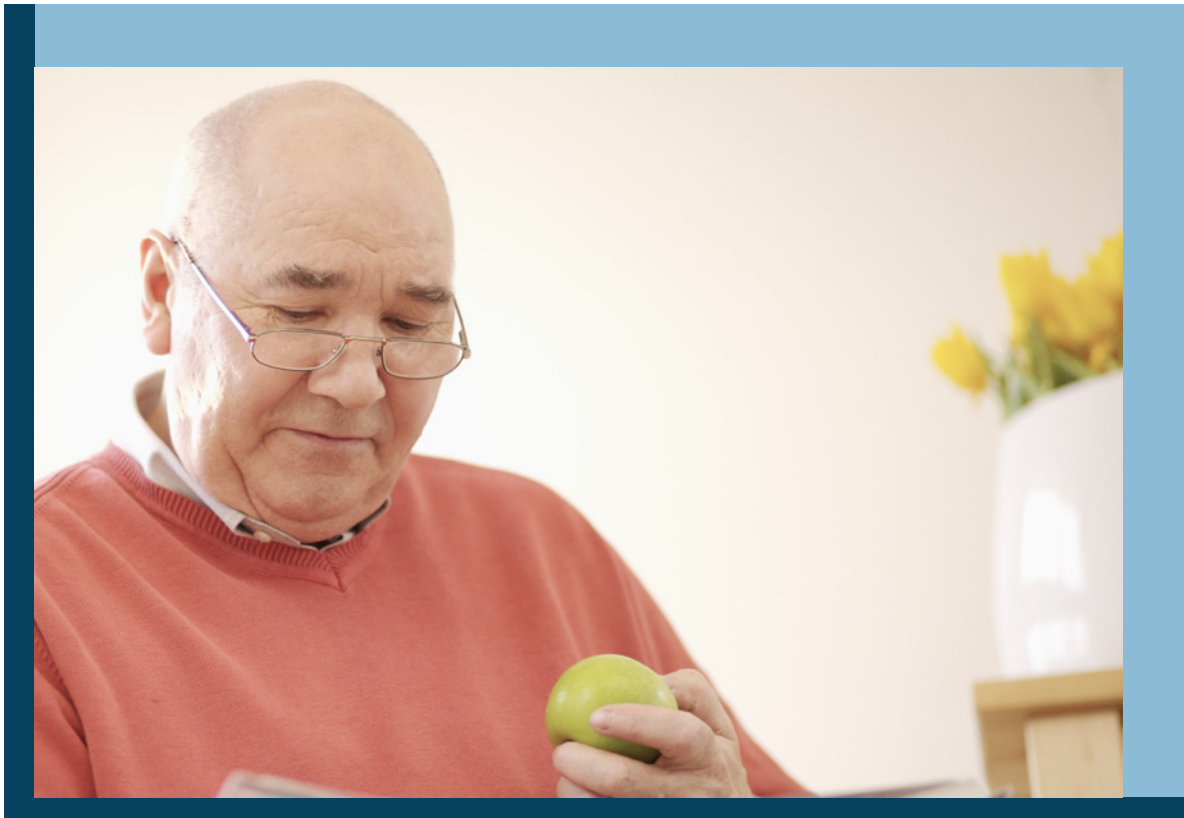
**Comment**

Physicians use HRAs to help develop and provide patients with tailored feedback reports that prioritize and highlight patients' health risks and appropriate action steps. Physicians can also use HRAs to inform their conversations with patients about how to change behaviors to reduce risks and engage in devising a realistic wellness plan. In addition to providing a written report, information sharing can occur during a face-to-face meeting or by telephone, allowing the patient to ask follow-up questions.

It is important to provide patients with longitudinal data charting progress in terms of health improvements and risk reduction. Recommendations should offer specific advice on what

patients should do with the results, contact information for physicians and health improvement coaches, information about relevant community resources, and directions on how to enroll in health and disease management programs, when appropriate. The report format should be easy to read and describe specific actions.

Like patients, physicians also require feedback that is actionable and can be applied to care management of their patients. For physicians, highlighting priority interventions based on patients' health risks and preferences is essential. With appropriate privacy protections, HRA data in aggregate can be leveraged to provide feedback to individual physicians, provider practices, health facilities, and accountable care organizations on their performance. Feedback reports should comply with data security, participant informed consent, and privacy and disclosure laws and regulations.





These summary reports can inform physicians, or physician groups, about the health risk profile of their patients at any point in time and improvements in that profile over time. Additional data related to patient satisfaction with and access to care can also be collected and reported in aggregate. This process gives patients a greater sense of control and empowerment over the HRA process.

Health plan incentives for enrollees, such as reduced insurance premiums, adjustment to coinsurance or copayments, and cash or gift rewards, have been shown to increase participation in workplace-based health promotion programs that use HRAs.<sup>(59)</sup> Providing incentives to health providers under an umbrella “pay for performance” model may induce more of them to provide *HRA Plus* services, but to ensure wider acceptance of the practice, the services should be viewed as enhancing patient care, relatively easy to deliver, and cost-effective for the practice. Research has shown that physician incentives can increase patient completion of HRAs and participation in health promotion programs.<sup>(60, 61)</sup>

**Recommendation 8 for HRA Developers and Payers**—*HRA Plus* implementation should follow principles of quality improvement. Two components are relevant to this recommendation:

1. Regularly update guidance for the *HRA Plus* process to ensure it aligns with emerging science related to health promotion and disease prevention.
2. Evaluate *HRA Plus* programs at key milestones to determine their effectiveness and guide program modification needed to ensure adherence to evidence-based medicine.

## Comment

### *HRA Plus Updates*

Updates to this guidance report should focus on the entire *HRA Plus* process and not just its individual parts (e.g., the HRA itself). Because HRAs and follow-up materials on the market are now nonstandard and proprietary, the validity and reliability of HRA instruments, as well as the feedback reports that inform follow-up interventions, should be reviewed and updated every 1–2 years. Comparisons can be made to other widely used and valid measures, such as the Medicare Health Outcome Survey (HOS).<sup>(62)</sup>

There are no widely sanctioned or accepted standards for *HRA Plus* administration through physician practices. HRA standards directed at the vendor community, driven by employer interests, have been developed by National Committee for Quality Assurance and the Utilization Review Accreditation Committee.

If a certification process is developed, it should first focus on HRAs in the public domain, similar to the approach used in certifying Consumer Assessment of Healthcare Providers and Systems (CAHPS) patient surveys.<sup>(63)</sup>

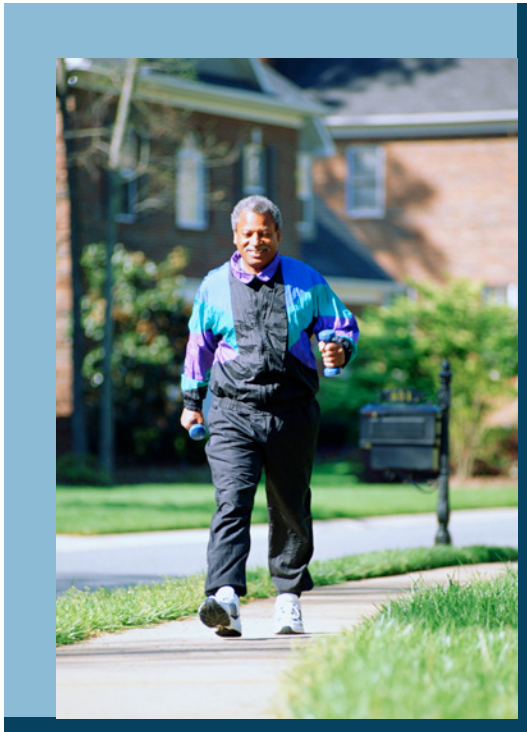
### *HRA Plus Evaluation*

The elements of the *HRA Plus* should be evaluated periodically on key structure, process, and outcome measures. Structure and process measures focus on the ease of adopting alternative program design elements, health- and cost-effectiveness of delivery models, program participation and engagement rates, patient and provider satisfaction, sustainability for use in primary care, and adherence to current and emerging best practices in health promotion and disease prevention. Outcome measures focus on reduction of health risk factors and adoption of positive behaviors across patient

populations, improving the quality and value of primary care services, and the impact these have on health.

Independent program evaluations should address the following questions:

- Are physicians and patients becoming meaningfully engaged in the *HRA Plus* process?
- Has the *HRA Plus* process improved health, reduced health risks, and improved self-management of diseases?
- Has use of preventive services increased?
- Have beneficiaries' self-assessments of their health status improved?
- Have patients changed their health habits for the better?
- Have patients' psychosocial status, quality of life, and overall functioning improved?



- Have health disparities in healthcare delivery and outcomes been reduced?
- What trends in health may be attributed to the *HRA Plus* process?

Data from those evaluations will guide development, refinement, and targeting of prevention interventions aimed at individuals and populations.

**Recommendation 9 for Health Providers, HRA Developers, and Payers**—When possible, *HRA Plus* data should be electronically incorporated into electronic/patient health records.

### Comment

To most efficiently achieve the aims of monitoring patients' health and well-being, HRA data need to be incorporated into the patient files, preferably in an electronic format. This task can be challenging because many different types of HRAs are available and currently in use and PHR and EMR data and systems are not yet standardized and linkable. Notwithstanding the current challenge of data integration, integrating *HRA Plus* and patient record data offers many advantages: increasing involvement of patients in decision-making; streamlining care, reducing provider burden and reducing overhead costs; providing clinicians with information from the patient's perspective; and improving population health surveillance. Although the majority of physicians are situated in small practices where digitized records may be limited, over the next decade, more small practices will adopt HIT into their practices.(64)

Additional challenges associated with transferring *HRA Plus* data into medical records include proprietary applications for both *HRA Plus* and EMR/PHR systems; complexities in searching, indexing, or disaggregating data for indi-

vidual patients; costly hardware and software; concerns about privacy and confidentiality; and lack of interest in aggregating data for surveillance or research.

In 2009, the Health Information Technology for Economic and Clinical Health Act, part of the American Recovery and Reinvestment Act of 2009, allocated federal dollars to encourage Medicare and Medicaid providers to invest in computer systems and IT to improve the health of patients and deliver high quality healthcare. (65). To receive an incentive payment, providers must adopt an IT system that improves patient care, described as “meaningful use,” as certified by the Office of the National Coordinator.(66)

**Recommendation 10 for Health Providers, HRA Developers, and Payers**—Conduct research to quantify longer-term health outcomes associated with use of the *HRA Plus* process.

### Comment

*HRA Plus* research has primarily focused on working-age adults, chiefly because employers have been in the forefront of incorporating risk assessments into workplace health promotion programs. However, employer-based research is often focused on a short time horizon, thereby restricting observed health and cost outcomes to those that can be documented within a limited timeframe—intermediate outcomes such as self-reported behavior change, biometrics such as weight loss, and, in some studies, healthcare use patterns and spending. Further research is needed to quantify the impact of the *HRA Plus* process on longer-term health outcomes, including those for older adults. It is important to garner data from valid and reliable *HRA Plus* tools, so that comparable data can be analyzed over time and across populations, as well as

to provide feedback to healthcare providers on key participation and performance outcome measures.

### Conclusion

Approximately 38 million Americans are currently aged 65 years or older.(67) By 2050, the number of Americans this age will more than double, expanding to nearly 89 million.(68) This increasing number of elderly adults presents critical challenges for our nation’s public health and healthcare systems unless improvements occur in population health. More than half of Medicare beneficiaries are treated for five or more chronic conditions annually (69), and coordination of their care is challenging. In one study, the average Medicare enrollee saw a median of two primary care physicians and five specialists working in four different practices each year (70); those with five or more chronic conditions see an average of 14 different physicians yearly. (71) Evidence suggests that multidisciplinary teams offering primary, secondary and tertiary prevention services can deliver higher-quality care at relatively low cost (72), and can achieve significant reductions in mortality, morbidity, and attendant health spending.(74)

Medicare’s adoption of the Annual Wellness Visit, as directed by the Affordable Care Act, provides the potential to increase delivery of health promotion and disease prevention services in clinical settings. A central element of that visit is the personalized prevention plan developed through a process described in this report as *HRA Plus* from which clinical and behavioral interventions promoting good health can flow naturally. (73) For the *HRA Plus* to succeed, it is important that it be perceived by clinicians as straightforward, easy to implement, and meaningful to both practitioners and patients.

The *HRA Plus* process is built on evidence-informed principles that include feedback, referral, follow-up, and monitoring as the foundation of individuals' personalized prevention plan. Increasing the use recommended clinical preventive services, just one part of the *HRA Plus* process, could reduce morbidity and mortality. Optimal use of clinical preventive services—particularly for cardiovascular conditions—could avert an estimated 50,000–100,000 deaths per year among adults aged <80 years and 25,000–40,000 deaths per year among those aged <65 years, assuming clinicians serving this younger population also adopt *HRA Plus*.<sup>(74)</sup>

Studies confirm that health promotion and disease prevention programs directed at a working age population can produce cost savings. A meta-analysis showed that these programs achieve a medical cost saving of \$3.27 for every \$1.00 invested in health promotion

activities.<sup>(75)</sup> Nationwide reducing diabetes and hypertension prevalence by 5% would reduce medical expenditures approximately \$9 billion annually over five years. With resulting reductions in co-morbidities and selected related conditions, averted costs could rise to approximately \$24.7 billion annually over 10 years.<sup>(76)</sup>

Population-based prevention efforts are effective in averting disease when reinforced with person-centered primary prevention, effective secondary prevention to detect illness, and tertiary prevention aimed at better managing existing illness and preventing additional disease and disability.<sup>(77)</sup> Preventing chronic diseases and keeping chronically ill older adults healthier are imperatives to drive improvements in health, quality of life, and value as part of the U.S. healthcare delivery system.<sup>(78)</sup> The *HRA Plus* can contribute to these vital aims.



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## Appendix





## Appendix: Sample Health Risk Assessment

The HRA questions outlined below are provided as examples. They represent one HRA model. Use of this model is not a requirement for the Medicare Annual Wellness Visit HRA, as a variety of HRA instruments will meet the Medicare HRA definition. Physician discretion will guide the implementation and use of HRAs. HRAs are not intended to be prescriptive, and physician judgment will identify appropriate interventions for individual patients. The sample questions reflect available scientific evidence.

### Physical Activity

In the past 7 days, how many days did you exercise?

\_\_\_\_\_ days

On days when you exercised, for how long did you exercise (in minutes)?

\_\_\_\_\_ minutes per day

Does not apply

How intense was your typical exercise?

- Light (like stretching or slow walking)
- Moderate (like brisk walking)
- Heavy (like jogging or swimming)
- Very heavy (like fast running or stair climbing)
- I am currently not exercising

### Tobacco Use

In the last 30 days, have you used tobacco?

Smoked:

- Yes
- No

Used a smokeless tobacco product:

- Yes
- No

If Yes to either,

Would you be interested in quitting tobacco use within the next month?

- Yes
- No

### **Alcohol Use**

In the past 7 days, on how many days did you drink alcohol?

\_\_\_\_\_ days

On days when you drank alcohol, how often did you have \_\_\_\_ (5 or more for men, 4 or more for women and those men and women 65 years old or over)) alcoholic drinks on one occasion?

- Never
- Once during the week
- 2–3 times during the week
- More than 3 times during the week

Do you ever drive after drinking, or ride with a driver who has been drinking?

- Yes
- No

### **Nutrition**

In the past 7 days, how many servings of fruits and vegetables did you typically eat each day?

(1 serving = 1 cup of fresh vegetables, ½ cup of cooked vegetables, or 1 medium piece of fruit. 1 cup = size of a baseball.)

\_\_\_\_\_ servings per day

In the past 7 days, how many servings of high fiber or whole grain foods did you typically eat each day?

(1 serving = 1 slice of 100% whole wheat bread, 1 cup of whole-grain or high-fiber ready-to-eat cereal, ½ cup of cooked cereal such as oatmeal, or ½ cup of cooked brown rice or whole wheat pasta.)

\_\_\_\_\_ servings per day

In the past 7 days, how many servings of fried or high-fat foods did you typically eat each day? (Examples include fried chicken, fried fish, bacon, French fries, potato chips, corn chips, doughnuts, creamy salad dressings, and foods made with whole milk, cream, cheese, or mayonnaise.)

\_\_\_\_\_ servings per day

In the past 7 days, how many *sugar-sweetened* (not diet) beverages did you typically consume *each day*?

\_\_\_\_\_ sugar sweetened beverages consumed per day

### **Seat Belt Use**

Do you always fasten your seat belt when you are in a car?

- Yes
- No

### **Depression**

In the past 2 weeks, how often have you felt down, depressed, or hopeless?

- Almost all of the time
- Most of the time
- Some of the time
- Almost never

In the past 2 weeks, how often have you felt little interest or pleasure in doing things?

- Almost all of the time
- Most of the time
- Some of the time
- Almost never

Have your feelings caused you distress or interfered with your ability to get along socially with family or friends?

- Yes
- No

## **Anxiety**

In the past 2 weeks, how often have you felt nervous, anxious, or on edge?

- Almost all of the time
- Most of the time
- Some of the time
- Almost never

In the past 2 weeks, how often were you not able to stop worrying or control your worrying?

- Almost all of the time
- Most of the time
- Some of the time
- Almost never

## **High Stress**

How often is stress a problem for you in handling such things as:

–Your health?

–Your finances?

–Your family or social relationships?

–Your work?

- Never or rarely
- Sometimes
- Often
- Always



### ***Social/Emotional Support***

How often do you get the social and emotional support you need:

- Always
- Usually
- Sometimes
- Rarely
- Never

### ***Pain***

In the past 7 days, how much pain have you felt?

- None
- Some
- A lot

### ***General Health***

In general, would you say your health is

- Excellent
- Very good
- Good
- Fair
- Poor

How would you describe the condition of your mouth and teeth—including false teeth or dentures?

- Excellent
- Very good
- Good
- Fair
- Poor

### ***Activities of Daily Living***

In the past 7 days, did you need help from others to perform everyday activities such as eating, getting dressed, grooming, bathing, walking, or using the toilet?

- Yes
- No

### ***Instrumental Activities of Daily Living***

In the past 7 days, did you need help from others to take care of things such as laundry and housekeeping, banking, shopping, using the telephone, food preparation, transportation, or taking your own medications?

- Yes
- No

### ***Sleep***

Each night, how many hours of sleep do you usually get?

\_\_\_\_ hours

Do you snore or has anyone told you that you snore?

- Yes
- No

In the past 7 days, how often have you felt sleepy during the daytime?

- Always
- Usually
- Sometimes
- Rarely
- Never

## Biometric Measures—Self-Reported

(To be completed by the patient only when the HRA is not prepopulated using laboratory, electronic medical record (EMR), patient health record (PHR), or other medical practice source data.)

### Blood Pressure

If your blood pressure was checked *within the past year*, what was it when it was last checked?

- Low or normal (at or below 120/80)
- Borderline high (120/80 to 139/89)
- High (140/90 or higher)
- Don't know/not sure

### Cholesterol

If your cholesterol was checked *within the past year*, what was your total cholesterol when it was last checked?

- Desirable (below 200)
- Borderline high (200–239)
- High (240 or higher)
- Don't know/not sure

### Blood Glucose

If your glucose was checked, what was your fasting blood glucose (blood sugar) level the last time it was checked?

- Desirable (below 100)
- Borderline high (100–125)
- High (126 or higher)
- Don't know/not sure

If diabetic, and if you have had your hemoglobin A1c level checked in the past year, what was it the last time you had it checked?

- Desirable (6 or lower)
- Borderline high (7)
- High (8 or higher)
- Don't know/not sure

### ***Overweight/Obesity***

What is your height without shoes? (for example, 5 feet and 6 inches = 5'6")

Feet \_\_\_\_\_ Inches \_\_\_\_\_

What is your weight?

Weight in pounds \_\_\_\_\_





