

Chapter 2: CORE PERFORMANCE MEASURES—A SYSTEMATIC APPROACH TO PROCESS AND OUTCOME EVALUATION

What is performance measurement for the purposes of the Steps Program?

Performance measurement is the routine monitoring of program inputs, outputs, and short-term, intermediate, and long-term outcomes.²¹ For health and human service programs, performance measurement typically involves collecting information about multiple aspects of the program, including the use of resources and efficiency of operations, direct products or services provided by the program, the quality of program activities, and the results of a program in relation to its intended purpose.²² For the Steps Program, performance measurement is the centerpiece of the national evaluation, or evaluation of the program as a whole. Program staff at the national, state, and community levels work together to collect and report data on selected performance measures; we use this information to: 1) demonstrate how resources allocated to the Steps Program are used; 2) assess progress toward intended outcomes; and 3) support continuous program improvement whenever possible.

On signing the Government Performance and Results Act of 1993 (GPRA), President William J. Clinton encouraged federal agencies to “chart a course for every endeavor that we take the people's money for, see how well we are progressing, tell the public how we are doing, stop the things that don't work, and never stop improving the things that we think are worth investing in.”²³ Following implementation of GPRA, HHS began establishing performance measures for all of its programs. Within HHS, performance measurement is a management tool to clarify goals, document specific contributions toward achieving those goals, and document the benefits of investment in each program.²⁴ Well designed performance measurement systems provide timely data for decision makers, especially those involved in improving the quality of programs¹⁹. In a climate of growing competition for limited resources, the ability to document good stewardship of public resources sets the stage for continued investment in a program.

What is the purpose of the core performance measures?

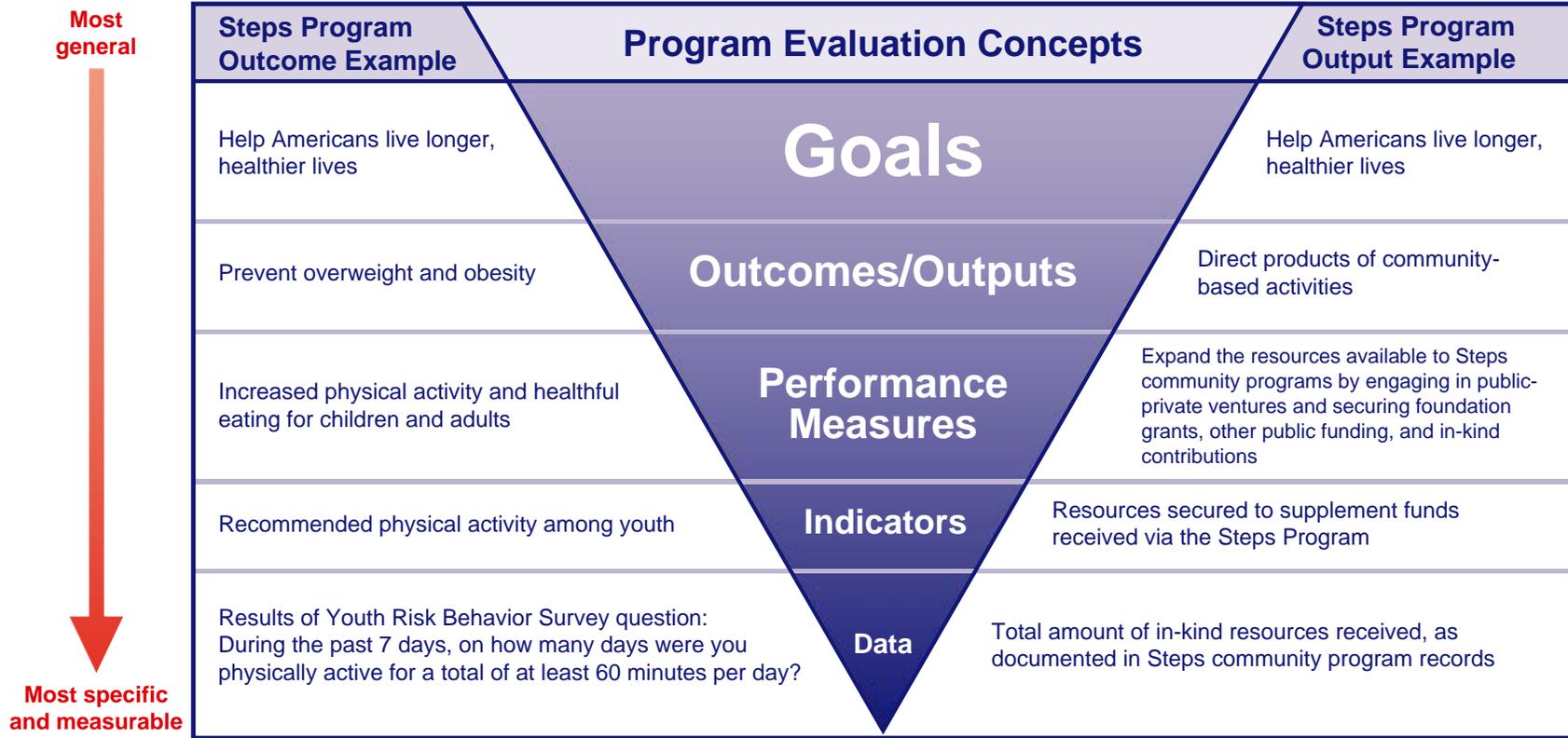
The primary purpose of the core performance measures is to demonstrate that the resources allocated to the Steps Program are accounted for and used wisely. This is consistent with CDC's pledge to the American people "to be a diligent steward of the funds entrusted to it."²⁵ The secondary purpose of the core performance measures is to support continuous quality improvement of the entire Steps Program. The Government Performance and Results Act of 1993 (GPRA) states that thoughtful planning and performance measurement can "improve the confidence of the American people in the capability of the Federal Government by systematically holding Federal agencies accountable for achieving program results."²⁶ Thus, we use these measures to document the results of the Steps Program in terms of cumulative progress toward intended outcomes (e.g., improved self-management of diabetes or asthma). The performance measures enable us to document and recognize program strengths and identify opportunities for improvement. Data collected may show which components of the program were not addressed as well as expected, or better than expected on the path to intended outcomes. In either case, CDC and all of the Steps communities learn valuable lessons that allow us to assure focus on activities with the greatest promise of results.

What are the core performance measures for the Steps Program?

Much like a spotlight focuses an audience's attention on an important action or event on the stage, performance measures draw attention to key aspects of a public health program. A *performance measure* is a quantitative or qualitative characterization of performance²². We assess performance on the basis of data collected on specific, observable indicators. An *indicator* is a measurable characteristic of a specified output or outcome.²⁷ For example, data for the indicator O-3.3, *recommended physical activity among adults aged 18 or older*, are used as evidence of progress (or lack of progress) toward performance measure O-3, *increased physical activity and healthful eating for children and adults*. There are also four additional indicators that are used as evidence of progress for this same performance measure.

To determine a program's status in relation to its goals requires increasing levels of specificity for data collection. Program staff and stakeholders must narrow broad concepts, or conditions of interest, for actual data collection, assessment, and use of findings. Figure 4 shows the increasing levels of specificity from program goals, to outcomes, to outputs, to performance measures, to indicators, and ultimately, to data collected. Figure 4 also includes examples of this process from Steps program outputs and outcomes.

Figure 4. Increasing Levels of Specificity in Program Evaluation Concepts on the Path to Measurement



Performance measurement systems “depend on a limited number of indicators that can track critical processes and outcomes.”²⁸ Between December 2003 and November 2005, Steps Program staff and stakeholders worked to select 18 performance measures and 44 indicators for the Steps Program. Each performance measure and indicator reflects a critical component of the Steps Program. Figure 5 shows each component in the Steps Program logic model and its corresponding performance measure. Taken in sum, these core performance measures and indicators convey the essence of the Steps Program and its proposed contribution to the goal of reducing the burden of chronic diseases across Steps communities. To this end, these data provide important information on program implementation and progress toward intended health outcomes over time—data collected are intended to convey the cumulative results of the Steps Program and how the program achieved those results.²⁹ As the Steps Program evolves in the years ahead, program implementation measures or indicators may evolve to reflect the maturity of the program. At present, stakeholders have agreed on 8 program implementation and 10 outcome measures:

Program Implementation Measures (I)

- I-1 Align the budget with program goals and intended outcomes.
- I-2 Ensure that community objectives and activities are consistent with and supportive of state plans for the prevention and control of obesity, diabetes, asthma, and associated risk factors, but do not duplicate interventions or activities.
- I-3 Expand the resources available to Steps community programs by engaging in public-private ventures and securing foundation grants, other public funding, and in-kind contributions.
- I-4 Participate in coordinated monitoring and evaluation activities that include 1) collecting data and reporting on common performance measures and 2) planning and implementing national evaluation activities.
- I-5 Expand existing surveillance mechanisms to collect representative Behavioral Risk Factor Surveillance System (BRFSS) data for adults annually and representative data from the Youth Risk Behavior Surveillance System (YRBSS) for high school students every 2 years
- I-6 Use multiple, evidence-based public health strategies.
- I-7 Improve integration of program components.

I-8 Document that intended populations participate in Steps communities' activities and interventions.

Outcome Measures (O)

O-1 Increased knowledge and awareness about healthy behaviors such as healthful eating, physical activity, and avoiding tobacco use.

O-2 Increased knowledge about getting appropriate preventive screenings.

O-3 Increased physical activity and healthful eating for children and adults.

O-4 Improved access to and quality of clinical services for diabetes, asthma, and tobacco use cessation.

O-5 Increased identification of persons with pre-diabetes and diabetes.

O-6 Improved self-management of diabetes and asthma.

O-7 Measurable improvements in healthful eating, physical activity, and tobacco use.

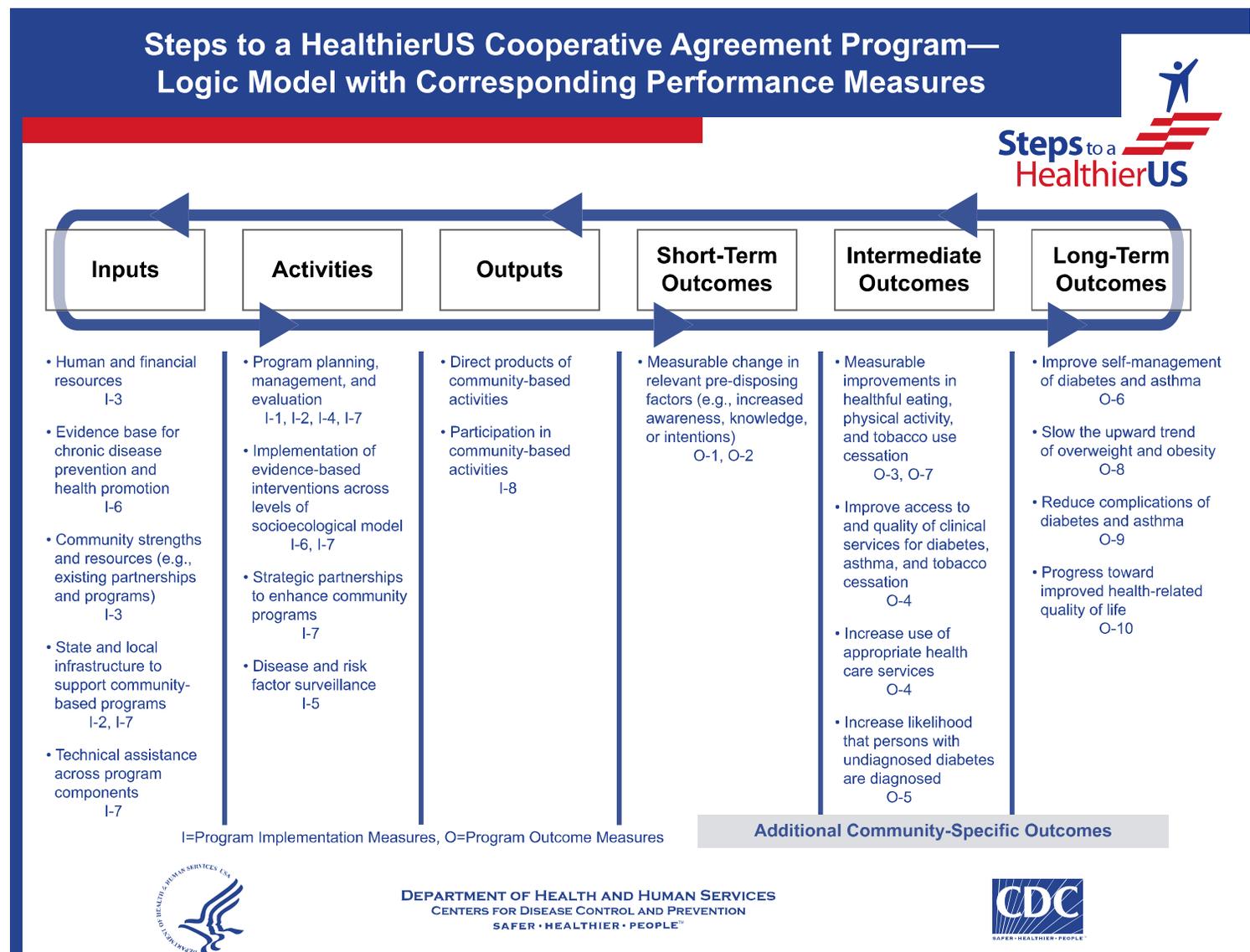
O-8 Slowed upward trend of overweight and obesity in Steps communities.

O-9 Reduced hospitalizations due to diabetes complications and asthma exacerbations.

O-10 Improved health-related quality of life.

Appendix B is a matrix of the 18 performance measures above and 44 related indicators; it includes the sources for data for each indicator and shows how each performance measure and indicator is consistent with relevant public health initiatives or documents (e.g., *The Guide to Community Preventive Services*,³⁰ *Healthy People 2010*³¹). To guide the user through the information, Appendix B also includes a map to the layout and content of the matrix.

Figure 5. Core Performance Measures Linked to each of the Program Components of the Steps Program Logic Model



What is the difference between *attribution* and *contribution* in program evaluation, and why is it important to the Steps Program?

Attribution is an “estimation of the extent to which any results observed are caused by a program.”³² Contribution, on the other hand, is an estimation of the extent to which a program “plays a significant part in bringing about an end or result.”³³ More traditional research in public health contexts seeks to determine attribution, or causality. To do this requires a certain level of control over the environment in which the program is conducted; this type of control is often unrealistic with regard to complex, community-based public health programs.³² Because one of the core elements of the Steps Program is implementation of evidence-based interventions, we do not aim to assess the effectiveness of individual interventions. Attributing community-wide change to any individual program is especially difficult when multiple funding sources or service providers address the same health issue,³⁴ as is the case in Steps communities. Moreover, many widely used indicators for tracking health outcomes (e.g., hospitalization with asthma among adults aged 18 years or older) “are affected by many factors ... so changes in outcomes cannot be attributed only to specific program effectiveness.”³⁴ The evaluation of the Steps Program seeks to provide “evidence concerning the program’s contributions to a long-term goal.”³² To this end, program evaluation includes information on both program implementation and progress toward intended outcomes. These data provide a sufficient picture of the program for accountability purposes, and offer evidence necessary for ongoing decision-making.

How do we use the core performance measures to document the Steps Program's contribution to reducing the burden of chronic diseases in Steps communities?

Public health programs often seek to “demonstrate that the program makes a contribution to reducing morbidity, mortality, or relevant risk factors.”³² As conceived and conducted here, performance measurement is a tool for assessing the program's contribution to a larger goal. We work from a clear description of the proposed relationship between program activities and intended outcomes.³⁵ As presented in the program logic model (Figure 2), the program's theory of change suggests that implementation of core elements of the program will contribute to progress toward the program's intended health outcomes. We use program implementation data to produce a succinct summary of how resources are used to implement core elements of the program. We use outcome data to track progress toward achieving the program's intended outcomes. If data collected suggest progress toward intended outcomes, it is not appropriate to assume that the Steps Program alone is responsible for the achievement. However, if the data show that elements of the program expected to generate progress toward the intended outcomes were implemented fully or sufficiently, and the data show progress toward the intended outcomes, it is reasonable to assume that the Steps Program contributed to measurable progress toward the intended outcomes.

How were performance measures, indicators, and data sources selected?

For this program and its evaluation, decisions about what to measure depended on two factors: 1) the intended use of data and 2) the priorities of the stakeholders choosing what to measure.²¹ Stakeholders involved in developing the core performance measures are listed as contributors at the start of this document. Appendix A is an annotated timeline of the development of the Steps Program's approach to program evaluation and selection of performance measures, indicators, and data sources. The timeline provides a summary of steps taken to plan for and initiate data collection program-wide. Throughout this process, we considered the relevant scientific findings and standards of practice,³⁶ and continuously assessed the resources (human and fiscal) available for program evaluation at the national, state, and community levels. The annotated timeline offers users a picture of the time and resources required to design and implement this assessment. For example, the 18 performance measures emerged very early in the planning process and required only minor changes in content or language as the work continued. However, selecting specific, measurable indicators for each performance measure required in-depth discussion and negotiation with many stakeholders over a much longer period of time.

The 44 indicators selected (Figure 6) reflect the best available research and stakeholders' practice wisdom relevant to the Steps Program and its evaluation. To ensure that information collected on these indicators meets stakeholders' expectations of quality, we drew on the published and fugitive literature, generally accepted methods or standards for program evaluation and performance measurement, and existing information from other CDC programs. In most cases, nine factors guided the selection of indicators and data sources:

- **Strength of Evidence:** The scope and quality of information supporting the indicator as appropriate for assessing the output or outcome. We considered supporting information from published data, stakeholders' practice wisdom, and consultation with technical experts across CDC and HHS (e.g., CMS, AHRQ, HRSA).
- **Utility:** The degree to which an indicator helps to answer the evaluation questions at hand.

- **Face Validity:** The degree to which an indicator appears legitimate to stakeholders or decision-makers. For the Steps Program, information on an indicator has face validity if stakeholders view it as a meaningful marker of accountability.
- **Wide Use or Accepted Practice:** The degree to which use of an indicator is consistent with current or accepted practice in public health. For example, some indicators selected to document program implementation are also included in the Program Assessment Rating Tool (PART).³⁷ Likewise, some indicators selected to monitor progress toward the Steps Program's intended outcomes are included in *Healthy People 2010* and *Indicators for Chronic Disease Surveillance*.^{31,38}
- **Availability of data via the BRFSS or YRBSS:** Data from a surveillance system can be useful for measuring health indicators needed for accountability.³⁹ Because participation in the BRFSS and YRBSS is an important element of the Steps Program, we use indicators for which data are available via these surveillance systems whenever possible and appropriate. Given the history of these systems, we expect that these data will be of sufficient quality and consistency.
- **Data Quality:** For outcome measures, the degree to which information recorded by a surveillance system is complete, reliable, and valid.³⁹ Detailed information on the quality of data collected via the BRFSS and YRBSS is available at www.cdc.gov/brfss and www.cdc.gov/HealthyYouth/yrbs/index.htm.^{40,41} For all sources of information, we assess data quality and look to avoid poor design or management of data collection processes.
- **Timeliness of Data:** Timeliness of data includes two elements: frequency and currency. Data should be available on a frequent enough basis to regularly inform program management decisions. Data should also be sufficiently up to date to be useful in decision-making.⁴² Timeliness is especially challenging in selecting sources of data for outcome indicators.
- **Investment of Resources:** The amount of funds, time, effort, materials, or expertise needed to collect, analyze, and use data on a specific indicator. The actual cost of using a specific indicator varies according to the capacity of a department of health or organization to collect data.⁴³ Though difficult to assess precisely, the cost of collecting data for an indicator, in terms of human and financial resources, should not exceed the utility of the information.⁴²

- **Maximum use of data in Steps communities:** Because data collection is resource intensive, Steps communities should be able to use the data collected for multiple purposes (e.g., mid-year or annual reports to CDC’s Procurement and Grants Office (PGO), ongoing program planning, or quality improvement efforts). To the extent possible, we selected indicators for which data can be collected via existing mechanisms (i.e., BRFSS and YRBSS, two well established data collection systems) and for which comparisons can be made to other communities, states, and the nation as a whole.

For each indicator, we developed a clear and comprehensive definition to help promote a reasonable level of consistency over time. This information is important both for simple indicators (i.e., those indicators comprised of data from one survey item) and for multidimensional indicators (i.e., those indicators comprised of more than one survey item—a calculated variable). In particular, definitions for multidimensional indicators must include clear a description for all survey items and method of aggregation. If indicators are not defined clearly and consistently, the data collected are less likely to provide a useful assessment of progress. These definitions are essential for collecting consistent data across multiple program sites. We provide a definition for each indicator in Appendix C. In addition to providing measurement definitions, indicator summaries contain information about the rationale for selecting the indicator; the intended use of data collected on the indicator; the frequency of data collection; and the indicator’s consistency with relevant agencies, initiatives, and guidance documents. At the front of Appendix C is a map that explains the layout and content of the indicator summaries.

Figure 6. Steps to a HealthierUS Cooperative Agreement Program Core Performance Measures and Indicators

Program Implementation Measures (I)

I-1 Align the budget with program goals and intended outcomes.

I-1.1. Fiscal resources allocated to address Steps focus areas and key health outcomes

I-2 Ensure that community objectives and activities are consistent with and supportive of state plans for the prevention and control of obesity, diabetes, asthma, and associated risk factors, but do not duplicate interventions or activities.

I-2.1. Objectives and activities linked to the work of state programs to prevent and control obesity, diabetes, asthma, or associated risk factors.

I-3 Expand the resources available to Steps community programs by engaging in public-private ventures and securing foundation grants, other public funding, and in-kind contributions.

I-3.1. Resources secured to supplement funds received via the Steps to a HealthierUS Cooperative Agreement Program.

I-4 Participate in coordinated monitoring and evaluation activities that include 1) collecting data and reporting on common performance measures and 2) planning and implementing national evaluation activities.

I-4.1. Submission of data on core performance measures according to established schedule

I-4.2. Participation in national-level evaluation tasks (e.g., sending feedback to Steps Program Office (SPO) on draft documents, task-specific workgroups, conference calls).

I-5 Expand existing surveillance mechanisms to collect representative Behavioral Risk Factor Surveillance System (BRFSS) data for adults annually and representative data from the Youth Risk Behavior Surveillance System (YRBSS) for high school students every 2 years

I-5.1. Appropriate and representative data collected via Behavioral Risk Factor Surveillance System.

I-5.2. Appropriate and representative data collected via Youth Risk Behavior Surveillance System.

I-6 Use multiple, evidence-based public health strategies.

I-6.1. Documented evidence for activities related to all the diseases and risk factors of interest to the Steps Program.

I-7 Improve integration of program components.

I-7.1. Implementation of 1) interventions that address at least two diseases or risk factors and 2) at least one intervention at each key sector.

I-7.2. Implementation of evidenced-based interventions that address access to healthcare, quality of healthcare, and use of healthcare.

I-7.3. Implementation of evidenced-based interventions across the socio-ecological model (i.e., individual, interpersonal, organizational, community, and public policy).

I-7.4. Partnership with the YMCA of the USA, or its local affiliate, to improve access to places for physical activity.

I-7.5. Composition and function of Steps Leadership Team (e.g., inclusion of non-traditional agencies or partners, state or local categorical programs, key community-based organizations, or representatives of the healthcare sector).

I-7.6. Composition and function of Steps State-Community Management Team (e.g., inclusion of coordinated Steps communities, non-traditional agencies or partners, state or local categorical programs, key community-based organizations, or representatives of the healthcare sector).

I-7.7. Provision of technical assistance to state-coordinated Steps communities (State only).

I-8 Document that intended populations participate in Steps communities' activities and interventions.

I-8.1. Reach (i.e., service to intervention areas or specific populations identified in community action plan)

Outcome Measures (O)

O-1 Increased knowledge and awareness about healthy behaviors such as healthful eating, physical activity, and avoiding tobacco use.

Community-specific indicators

O-2 Increased knowledge about getting appropriate preventive screenings.

Community-specific indicators

O-3 Increased physical activity and healthful eating for children and adults.

- O-3.1. Fruit and vegetable consumption among adults aged 18 or older
- O-3.2. Fruit and vegetable consumption among youth
- O-3.3. Recommended physical activity among adults aged 18 or older
- O-3.4. Recommended physical activity among youth
- O-3.5. Television viewing among youth

O-4 Improved access to and quality of clinical services for diabetes, asthma, and tobacco use cessation.

- O-4.1. Health care access
- O-4.2. Foot examination among adults aged 18 or older with diabetes
- O-4.3. Dilated eye examination among adults aged 18 or older with diabetes
- O-4.4. Glycosylated hemoglobin measurement at least twice a year among adults aged 18 or older with diabetes
- O-4.5. Adults with asthma aged 18 or older receiving routine checkups for asthma
- O-4.6. Adult smokers aged 18 or older advised by health care provider to quit smoking
- O-4.7. Tobacco use cessation attempts by adolescent smokers

O-5 Increased identification of persons with pre-diabetes and diabetes.

- O-5.1. Reduce the overall rate of diabetes that is clinically diagnosed among adults
- O-5.2. Reduce the overall rate of diabetes that is clinically diagnosed among youth

O-6 Improved self-management of diabetes and asthma.

- O-6.1. Self blood-glucose monitoring among adults aged 18 or older with diabetes
- O-6.2. Self foot exam among adults aged 18 or older with diabetes
- O-6.3. Symptom-free days among adults aged 18 or older with asthma

O-7 Measurable improvements in healthful eating, physical activity, and tobacco use.

Indicators include O-3.1 – O-3.5 in addition to those below

- O-7.1. Tobacco use cessation attempts by adult smokers
- O-7.2. Tobacco use cessation attempts by adolescent smokers
- O-7.3. Cigarette smoking among adults aged 18 or older
- O-7.4. Cigarette smoking among youth

O-8 Slowed upward trend of overweight and obesity in Steps communities.

- O-8.1. Prevalence of overweight or obesity among adults aged 18 or older
- O-8.2. Obesity prevalence among adults aged 18 or older
- O-8.3. Overweight prevalence among youth

O-9 Reduced hospitalizations due to diabetes complications and asthma exacerbations.

- O-9.1. Hospitalization with asthma among adults aged 18 or older
- O-9.2. Hospitalization with asthma among youth
- O-9.3. Hospitalization with diabetes among adults aged 18 or older

O-10 Improved health-related quality of life.

- O-10.1 Mean number of Healthy Days among adults aged 18 or older