

Community Guide Methods for Systematic Reviews of Economic Evidence



Sajal K. Chattopadhyay, PhD,¹ Verugheese Jacob, PhD, MPH, MS,¹ David P. Hopkins, MD, MPH,¹ Amy Lansky, PhD, MPH,¹ Randy Elder, PhD, MEd,² Alison E. Cuellar, PhD,³ Ned Calonge, MD, MPH,⁴ John M. Clymer, BA⁵, and the Community Preventive Services Task Force

Introduction: Community Guide systematic economic reviews provide information on the cost, economic benefit, cost-benefit, and cost-effectiveness of public health interventions recommended by the Community Preventive Services Task Force on the basis of evidence of effectiveness. The number and variety of economic evaluation studies in public health have grown substantially over time, contributing to methodologic challenges that required updates to the methods for Community Guide systematic economic reviews. This paper describes these updated methods.

Methods: The 9-step Community Guide economic review process includes prioritization of topic, creation of a coordination team, conceptualization of review, literature search, screening studies for inclusion, abstraction of studies, analysis of results, translation of evidence to Community Preventive Services Task Force economic findings, and dissemination of findings and evidence gaps. The methods applied in each of these steps are reported in this paper.

Results: Two published Community Guide reviews, tailored pharmacy-based interventions to improve adherence to medications for cardiovascular disease and permanent supportive housing with housing first to prevent homelessness, are used to illustrate the application of the updated methods. The Community Preventive Services Task Force reached a finding of cost-effectiveness for the first intervention and a finding of favorable cost-benefit for the second on the basis of results from the economic reviews.

Conclusions: The updated Community Guide economic systematic review methods provide transparency and improve the reliability of estimates that are used to derive a Community Preventive Services Task Force economic finding. This may in turn augment the utility of Community Guide economic reviews for communities making decisions about allocating limited resources to effective programs.

Am J Prev Med 2023;64(4):569–578. Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine.

INTRODUCTION

Systematic reviews of effectiveness and economic evidence for public health interventions that improve population health, conducted according to a published methodology of the Community Guide (CG),¹ are used by the Community Preventive Services Task Force (CPSTF) for its recommendations and findings. The CPSTF is an independent, nonfederal panel of public health and prevention experts whose members represent a broad range of research, practice, and policy

From the ¹The Community Guide Office, Office of the Associate Director for Policy and Strategy, Centers for Disease Control and Prevention, Atlanta, Georgia; ²Office of Science, Centers for Disease Control and Prevention, Atlanta, Georgia; ³Department of Health Administration and Policy, College of Health and Human Services, George Mason University, Fairfax, Virginia; ⁴Department of Family Medicine, University of Colorado, Aurora, Colorado; and ⁵National Forum for Heart Disease and Stroke Prevention, Washington, District of Columbia

Address correspondence to: Sajal K. Chattopadhyay, PhD, The Community Guide Office, Centers for Disease Control and Prevention, 1600 Clifton Road, Mail Stop H21-10, Atlanta GA 30329. E-mail: skc9@cdc.gov. 0749-3797/\$36.00

<https://doi.org/10.1016/j.amepre.2022.10.015>

expertise in community preventive services, public health, health promotion, and disease prevention.²

Systematic economic reviews are conducted for interventions that are recommended by the CPSTF on the basis of evidence of their effectiveness. The objective is to provide information on the cost, economic benefit, cost-benefit, and cost-effectiveness of CPSTF-recommended interventions—evidence that is important for public health decision makers to determine the affordability of these interventions and their economic merits.

Carande-Kulis et al.³ described the original methods for the CG systematic economic reviews using the reference case of the Panel on Cost Effectiveness in Health and Medicine.⁴ Since that publication, the number and variety of economic evaluations in public health have grown substantially, contributing to methodologic challenges that led to these updated methods. The process benefited from the work of major groups engaged in evidence reviews, including the U.S. HHS's Agency for Healthcare Research and Quality,⁵ Cochrane,^{6–9} and the United Kingdom's National Institute for Health and Care Excellence.¹⁰ Several guideline tools such as Consensus Health Economic Criteria^{11–13}; PRISMA¹⁴; Meta-analysis of Observational Studies in Epidemiology¹⁵; Grading of Recommendations Assessment, Development and Evaluation¹⁶; Consolidated Health Economic Evaluation Reporting Standards¹⁷; and A Measurement Tool to Assess Systematic Reviews¹⁸ also informed the development of the updated methods. The updated methods retained most of the original methods in Carande-Kulis and colleagues,³ made minor changes for a few, and provided enhanced methods to respond to new methodologic challenges. This paper describes these methods using 2 different interventions as examples to illustrate their application.

METHODS

The updated methods, reported in 9 economic review process steps (Figure 1) in Methods Manual for Community Guide Systematic Reviews,¹⁹ include prioritization, creation of a coordination team (CT), conceptualization of review, literature search, screening studies for inclusion, abstraction of studies, analysis of results, translation of evidence to CPSTF economic findings, and dissemination of findings and evidence gaps.

Prioritization. For interventions recommended by CPSTF, Community Guide Office (CGO) staff at the Centers for Disease Control and Prevention (CDC) first conduct informal desktop searches (e.g., Google Scholar) to determine whether there are at least 2 studies to obtain any CPSTF economic finding. Reviews meeting the feasibility criterion are then presented to CPSTF members serving in the Prioritization Committee (PZC) for their approval and ranking on the basis of the importance of the topic, the body of evidence, partner interest, and required staff resource.

Creation of Coordination Team. At the outset of each effectiveness review, a CT is created with CGO scientists trained in systematic review methods, members of CPSTF, and subject-matter experts (SMEs) from partner divisions within CDC; within other federal, state, or local agencies; and from private organizations, foundations, and academia. For the economic review CT, CPSTF members with an economics background or interest and SMEs from within or outside of CDC are added to the effectiveness CT. The number of CT members for an economic review may vary depending on the needs of the intervention topic. The economic review CT guides the process and approves the review products described in the steps below.

Conceptualization of Review. Conceptualization starts with the intervention definition and analytic framework developed during the effectiveness review. The economic analytic framework is built on the effectiveness analytic framework and identifies the intervention, population, and economic outcomes of interest. The CT identifies the components for each economic outcome and the drivers—components that contribute substantially to the magnitude of the estimated outcome.

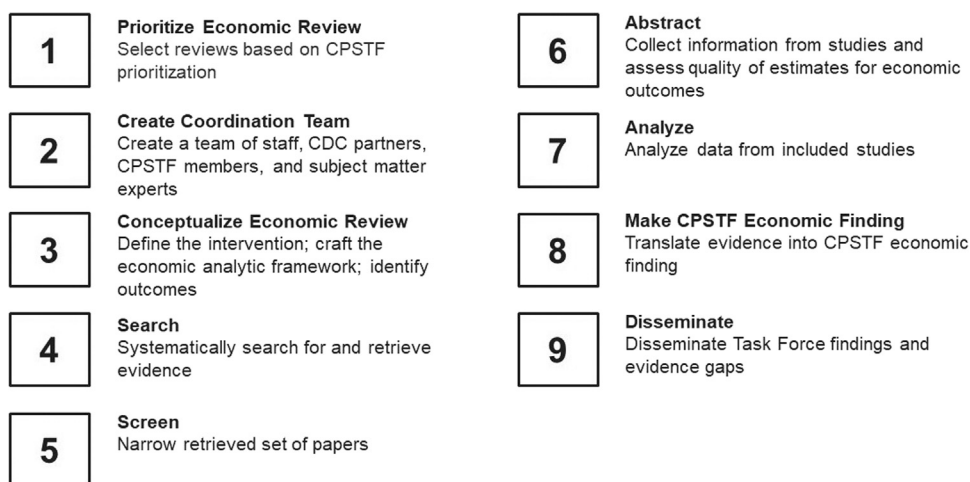


Figure 1. Steps in a Community Guide systematic economic review process.

CDC, Centers for Disease Control and Prevention; CPSTF, Community Preventive Services Task Force.

Common research questions include the following:

- What is the intervention cost?
- What is the intervention benefit?
- Does intervention benefit exceed intervention cost?
- Is the intervention cost-effective?

The economic outcomes in the analytic framework that form the basis of these questions are described below.

Intervention costs capture the costs of resources used to implement an intervention and typically include costs of labor, materials, space, and utilities.

Intervention economic benefits include averted healthcare costs because of improved health, increased productivity of participants at their workplaces, and other nonhealth benefits.

Defined as the ratio of or the difference between the monetized benefits and costs, cost-benefit estimates, from a societal perspective, include all benefits and costs regardless of who pays or who benefits.²⁰ An intervention would be considered cost-beneficial if benefits exceed costs.

Measured as the ratio of the difference in averted costs and intervention cost to intervention cost, return on investment (ROI) is based on the perspective of the investor or intervention funder, which is narrower than the societal perspective of a cost-benefit estimate.²¹

The incremental quality-adjusted life years (QALYs) gained or disability-adjusted life years (DALYs) averted are measures of intervention effects widely used in health economics²² that account for both the length and quality of years lived. The incremental cost-effectiveness ratio is the change in total cost per additional QALY gained or DALY averted compared with that of no intervention, usual care, or the next effective intervention. CPSTF considers an intervention to be cost-effective when the incremental cost per QALY gained is $\leq \$50,000$ ²³ or the incremental cost per DALY averted is less than or equal to the per capita Gross Domestic Product of the relevant country.²⁴ These thresholds are conservative for both QALY^{23,25,26} and DALY.²⁷

Literature Search. Search strategies include sets of terms that define the intervention, population, disease or risk factors, and intervention effectiveness and economic outcomes. CG systematic reviews include all quantitative comparative study designs. The rationale for casting a broad net beyond RCTs is that the kinds of interventions of interest to CPSTF include policy and programmatic initiatives that are not amenable to randomization or control designs. Given the population health and economics foci, the following databases are usually searched: Medline, Embase, CINAHL, PsycINFO, ERIC, Cochrane, and EconLit. Specialized databases and gray literature may be added to the search strategy depending on the intervention being reviewed.

Screening. Papers from the search yield are screened in 2 stages to identify studies for inclusion in the review, first at the title and abstract level and second at the full-text level. The screening is performed by 2 or more CGO staff working independently and resolving conflicts through team discussion. Broad inclusion criteria listed below are applied along with others that may be specific to the review:

- meets intervention definition;
- is an evaluation;

- conducted in a high-income country as defined by the World Bank²⁸;
- written in English; and
- answers 1 or more economic research questions.

Abstraction. Information and data are collected from each included study by 2 abstractors working independently. Differences are resolved through team discussions.

Updated methods include explicit quality assessment of each economic estimate within 2 domains: quality of capture and quality of measurement. Quality of capture, assessed as good, fair, or limited, is based on how well the estimate captures the components that are deemed to be drivers of magnitude. Drivers of cost and benefit estimates were introduced earlier in the analytic framework. Quality of measurement, assessed as good, fair, or limited, is based on the appropriateness of population, study design, and data used to derive the estimate.¹⁹ The overall quality of an estimate is the lower of the quality assigned in the 2 domains. Estimates with limited quality are removed from further consideration. Finally, composite outcomes, such as the ratio of benefits to costs, receive lower quality scores assigned to each component.¹⁹ A tool for quality assessment of economic evidence is developed by the CT for each CG economic review. Two raters independently assign and later reconcile the quality of the estimates.

Common features of quality assessment include the determination of the quality of capture on the basis of how many components known to be drivers of magnitude are included in the reported estimate. By contrast, quality of measurement is multivariate and determined by the sum of limitation points assigned from a list of possible limitation factors that cover the areas of population, design and internal validity, and data source. Study population must conform to the population for which the intervention is defined. Limitation points are assigned if a study population is near normal for a risk factor or condition that the intervention aims to treat or avert. Study design and internal validity of estimates are assessed to ensure that the estimates measure intervention-attributable outcomes. Estimates for economic outcomes must be interpretable as causal. Limitation points are assigned to estimates that are not based on differences between an intervention and a control group or where the assignment to intervention was not random. Given the current knowledge, there are expectations about the time required for the intervention to produce outcomes. Estimates with time horizons that are inappropriate for the intervention being evaluated are assigned limitation points. Regarding data sources, limitation points are assigned for estimates on the basis of data that are further removed from the intervention as implemented (e.g., from other studies) and from effects as observed (e.g., patient self-reports).

Additional factors are assessed for modeled estimates. The inputs that produce the modeled outcomes must start from the observed effects of the intervention. Limitation points are also assigned for lack of sensitivity analyses, failure to discount future values, and failure to use validated instruments or referenced peer-reviewed studies as sources for parameter values.

Analysis and Summarization. Estimates abstracted from the studies are standardized for comparability by conversion to a per capita basis such as per person per year. Monetary values are converted to U.S. dollars using consumption purchasing power

parities published by the World Bank²⁹ and adjusted for inflation using the consumer price index for the universe of goods consumed by U.S. urban consumers, published by the Bureau of Labor Statistics.³⁰

Estimates and their quality ratings are presented to the CPSTF to support decision making for an economic finding. Studies for a CG review can differ in implementation, populations, and settings, all of which contribute to the heterogeneity of economic outcomes of public health interventions. CG methods use medians and interquartile intervals as measures to summarize results and limit the influence of outliers.

Translation of Evidence. A CPSTF cost-effectiveness finding is dependent on the availability of QALY outcome or existing conversion formulas to translate other outcomes to QALY. CPSTF issues an economic finding statement when there is sufficient evidence for (1) cost-benefit, (2) ROI, or (3) cost-effectiveness. The minimum evidence required to reach an economic finding for an intervention is 2 studies with good quality estimates, 3 studies with a mixture of good and fair quality estimates, or 4 studies with fair quality estimates. The direction of the effect implied by estimates may differ across studies. For inconsistent evidence, the CPSTF may decide to upgrade a no finding to a favorable economic finding when median and interquartile estimates are in the favorable direction.

CPSTF economic findings include only favorable cost-benefit and ROI evidence but either favorable or unfavorable cost-effectiveness evidence. Benefits are likely to be underestimated in cost-benefit assessments because favorable morbidity outcomes such as reduction in pain and suffering and improvement in quality of life are difficult to monetize. Similarly, benefits are underestimated in ROI assessments because only benefits from the limited perspective of the investing entities are considered. Decision tables that summarize the rules followed by CPSTF to reach an economic finding may be found in the CG Methods Manual ([Appendix Tables 8 and 9](#), available online).¹⁹ Although cost-benefit and cost-effectiveness evidence are commonly reported as CPSTF economic findings, the CPSTF may choose to include only a cost finding for particularly resource-intensive interventions³¹ or only a benefit finding for policy interventions with benefit information only.³²

Dissemination. The economic review may reveal important research gaps, and gaps may also be identified from elements in the economic analytic framework that are not estimated or addressed in the current research. Once the review is completed and ratified by the CPSTF, the results and findings from the effectiveness and economic reviews, including evidence gaps, are summarized and published on the CG website.³³ E-mail notifications and social media posts are updated and redistributed.

RESULTS

Two CG-published reviews—tailored pharmacy-based interventions to improve adherence to medications for cardiovascular disease (TPA)³⁴ and permanent supportive housing with Housing First to prevent homelessness (PSH)³⁵—are used below to describe the application of the methods for 7 steps. For screening and analysis and summarization steps, standard methods were followed.

Prioritization. In 2019, the TPA intervention was ranked first by the PZC on the basis of the interest from CDC's Division of Heart Disease and Stroke Prevention and the initial identification of 5 cost-benefit studies. In 2020, PZC ranked PSH over the school-based asthma intervention because it fell within the CPSTF priority topic of social determinants of health and because the initial search identified 3 papers with cost and utilization information.

Coordination Team. SMEs for the TPA included health plan administrators and pharmacists. For the PSH review, SMEs included individuals from the U.S. Department of Housing and Urban Development (HUD) and organizations serving the homeless.

Conceptualization. [Table 1](#) provides the intervention definitions for the TPA and PSH reviews. The analytic frameworks for the 2 reviews ([Figure 2](#)^{34,35}) show the pathways from population and intervention to effectiveness outcomes and the associated economic outcomes. The components of each outcome are also shown with drivers marked with an asterisk. For the TPA review, the drivers of intervention costs were pharmacist and other staff salaries, the cost of patient education materials and adherence aids, and the cost of any added intervention such as team-based care or case management. For the PSH review, the drivers were the costs of housing locator services, rent subsidies, and the labor necessary for healthcare support services. The resources used for the TPA intervention arise from the healthcare sector, whereas those for the PSH intervention are incurred in both healthcare and housing sectors. For economic benefits, the predominant expected economic benefits for the TPA intervention were improved productivity and healthcare costs averted, which included savings in inpatient stays, emergency department visits, outpatient visits, medication, and laboratory tests ([Figure 2](#),^{34,35}). For the PSH intervention, economic benefits included averted costs of healthcare and of other social services, including temporary housing, judicial and law enforcement costs, welfare and disability transfers, and unemployment benefits. ROI outcomes for the TPA and PSH reviews were defined from a healthcare systems perspective and the perspective of housing agencies such as the HUD in the U.S., respectively. Alternate specifications may be used where the intervention cost and averted cost or benefit accrue to another entity such as employers³⁶ or the school system.³⁷

Literature Search. No specialized databases were searched for the TPA review.³⁸ For the PSH review, additional searches were conducted for studies in Sociological Abstracts and for reports in HUD.gov and National Technical Information Service from government agencies and organizations serving the homeless.³⁹

Table 1. Intervention Definition of Tailored Pharmacy-Based Interventions and Permanent Supportive Housing Programs

Tailored pharmacy-based interventions to improve medication adherence for cardiovascular disease	Permanent supportive housing with housing first to reduce homelessness
<p>Tailored pharmacy-based interventions aim to help patients with cardiovascular disease risk conditions take their medications as prescribed. Community or health system pharmacies use assessment tools or interviews to identify adherence barriers for each patient. Pharmacists then provide tailored guidance and services to reduce those barriers.</p> <p>Tailored guidance includes either focused medication counseling or motivational interview sessions. Services include one or more of the following: patient tools such as pillboxes, medication cards, and calendars; medication refill synchronization; and enhanced follow-up.</p> <p>Interventions may include additional components such as communication between the pharmacist and the patient’s primary care provider or patient education materials. Interventions may be used alone or they may be part of a broader intervention to reduce patients’ cardiovascular disease risk.</p>	<p>Housing First Programs provide regular, subsidized, time-unlimited housing to individuals and families experiencing homelessness in which the head of household has a disabling condition, which may include mental health or substance use disorders, difficulties in independent working and living, and HIV infection. Clients are not required to be housing ready, that is, substance-free or in treatment. Once housed, they are encouraged but not required to maintain sobriety to keep their home. Clients may choose among housing alternatives and available services. Most options require meeting HUD housing standards as well as standards of accessibility and reasonable accommodation.</p> <p>Housing First Programs offer clients a range of services to support housing stability, including one or more of the following: help with housing (e.g., assistance getting furniture and training in money management, including rent), health care, mental health services, treatment for substance use disorder, peer support, occupational therapy, and employment counseling.</p> <p>Programs may vary in terms of types of housing offered (grouped versus scattered), meeting requirements (client with caseworker), tailoring to client needs, and monitoring program fidelity.</p>

UHD, Department of Housing and Urban Development.

Abstraction. The variables captured in the abstractions for the TPA and PSH reviews are provided in [Appendix Tables 1 and 2](#) (available online). For each of intervention cost, intervention benefit, and modeled benefits such as QALY/DALY, [Table 2](#) shows the questions that guided the reviewers and the scales they used to arrive at assessments of good, fair, and limited quality for quality of capture, quality of measurement, and overall quality. The complete tools are available as supplementary materials from the published TPA³⁴ and PSH³⁵ reviews.

For the quality of capture of intervention cost estimates, [Table 2](#) shows that the drivers for TPA (i.e., pharmacy wages, patient materials, added interventions) were very different in both content and count from those in the PSH review (i.e., housing rent, other housing assistance, healthcare support, additional support), thus leading to different scales for the assignment of quality of capture. Similarly, for the quality of capture of intervention benefit estimates, the drivers differed in content and count between the TPA review (e.g., outpatient visits, inpatient stays) and PSH review (e.g., physical and mental healthcare cost, emergency housing). For quality of measurement, a limitation point was assigned to intervention benefit estimates when a study included in the TPA review had patients whose cardiovascular risk factors were near normal at baseline or when a study included in the PSH review had participants who were neither chronically homeless nor had a chronic disease.

For the benefits of healthcare cost averted reported in studies included in the TPA review, a limitation point was assigned for follow-up measurements taken at ≤6 months because postulated reductions in healthcare costs because of reduced cardiovascular risk factors from greater medication adherence are likely to take longer time. In addition, in the TPA review, limitation points for quality of measurement were assigned to estimates for change in healthcare cost if the primary International Classification of Diseases code associated with the resource utilization was related to all cause rather than to cardiovascular disease or a cardiovascular disease risk factor. When a random assignment is infeasible for technical or ethical reasons, reviewers accepted an alternative approach such as a propensity score–matched group in lieu of an experimental control as in case of PSH intervention. For the TPA review, modeled QALY outcomes had to be generated from changes in clinical outcomes observed within the study such as a change in blood pressure or lipid profile. Furthermore, the model parameters that convert those clinical outcomes to QALY gained had to be based on associations drawn from large longitudinal trials such as Framingham Heart Study⁴⁰ or the United Kingdom Prospective Diabetes Study⁴¹ or based on systematic review; otherwise, limitation points were assigned.

Translation of Evidence. CPSTF found that the TPA intervention is cost-effective for cardiovascular disease prevention on the basis of a median estimate of \$11,298

A (TPA). Tailored Pharmacy-based Interventions to Improve Medication Adherence for Cardiovascular Disease

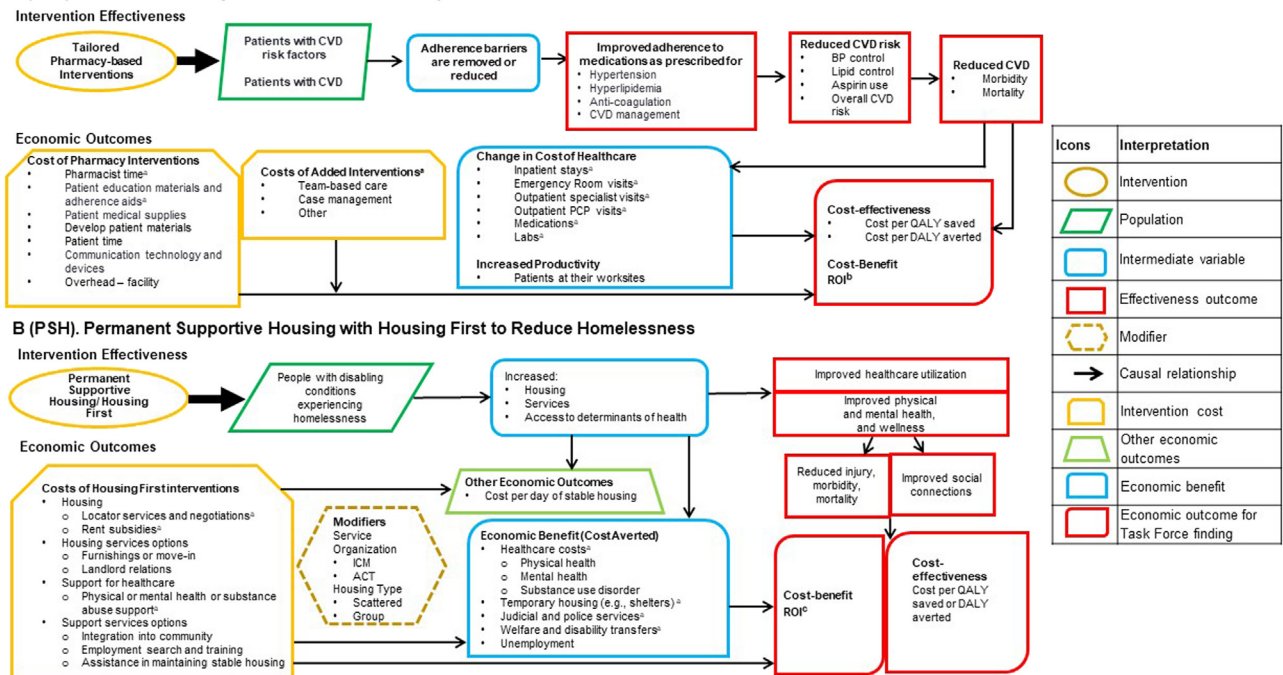


Figure 2. Analytic frameworks for 2 Community Guide economic reviews.^{34,35}

^aCost drivers.

^bPerspective of healthcare system.

^cPerspective of housing agency or department.

ACT, assertive community treatment; BP, blood pressure; CVD, cardiovascular disease; DALY, disability-adjusted life year; ICM, intensive case management; Labs, laboratories; PCP, primary care provider; PSH, permanent supportive housing with housing first to reduce homelessness; QALY, quality-adjusted life year; ROI, return on investment; TPA, tailored pharmacy-based interventions to improve adherence to medications for cardiovascular disease.

per QALY saved, which is below a conservative threshold of \$50,000. For the PSH intervention, CPSTF found that the economic benefits exceed the intervention cost.

Dissemination. News releases and other promotional materials for the 2 reviews were developed by the CG dissemination team and are available from the CG website.^{38,39}

DISCUSSION

Many handbooks, guidelines, and checklists have been published in recent years to assist with the conduct of economic evaluation studies and in their assessment for the purpose of evidence synthesis. The updated CG systematic economic review methods take these resources into consideration while attending to several distinguishing features: CG economic systematic reviews include study designs other than RCTs,^{5–7} focus on population versus individual or patient outcomes,^{5–7,17} consider intervention costs and intervention benefits as economic outcomes of interest as well as cost-effectiveness and

cost-benefit, engage CTs of SMEs for each topic, and conduct a quality assessment for each estimate, not just for the study or overall evidence.^{5–7,10,12,13,16}

Appendix Table 3 (available online) presents a comparison between the original and updated CG economic methods. A major enhancement in methods includes the implementation of decision tables to support the CPSTF economic findings.

Limitations

A limitation with the current method to support a cost-effectiveness finding involves the use of the very conservative \$50,000 per QALY saved as a threshold for a cost-effectiveness finding. This long-serving threshold persists in the literature without adjustment for inflation or economic growth.²⁶ A second limitation is the absence of CI for summary statistics. This is because of the difficulty of conducting meta-analysis in economic evaluations. The CG economic methods will continue to evolve and be updated as new information and methods are available.

Table 2. Quality Assessment of Estimates for the Pharmacy-Based and Permanent Supportive Housing Interventions

Type of estimate	Pharmacy-based interventions for medication adherence	Permanent supportive housing with Housing First
Intervention cost	<p>Quality of capture</p> <ul style="list-style-type: none"> • Are these drivers included in the estimate? • Pharmacist and staff wages • Patient education materials and adherence aids • Interventions added to the pharmacy intervention <p>Good, fair, or limited for capture of drivers if the total number of drivers not included in the estimate was 0–1, 2, or 3, respectively</p>	<p>Quality of capture</p> <p>Are these drivers included in the estimate?</p> <ul style="list-style-type: none"> • Housing rent subsidies and locator services • Other housing assistance such as move-in costs • Healthcare support for physical or mental health • Any additional supports provided to participants <p>Good, fair, or limited for capture of drivers if the total number of drivers not included in the estimate was 0, 1–3, or 4, respectively</p>
	<p>Quality of measurement</p> <p>Identify where limitations occurred</p> <ul style="list-style-type: none"> • Population <ul style="list-style-type: none"> • Sample size of <50 • Data source <ul style="list-style-type: none"> • Drawn from data external to study • Valuation based on non-local prices and conditions • Intervention cost contaminated with other components such as healthcare <p>Good, fair, or limited for measurement if the limitation totaled 0–2, 3, or 4, respectively</p>	<p>Quality of measurement</p> <p>Identify where limitations occurred</p> <ul style="list-style-type: none"> • Population <ul style="list-style-type: none"> • Participants not chronically homeless or disabled • Sample size of <50 • Data source <ul style="list-style-type: none"> • Drawn from data external to study • Valuation based on prices and conditions that are not local <p>Good, fair, or limited for measurement if the limitations totaled 0–2, 3, or 4, respectively</p>
	<p>Overall quality of intervention cost estimate</p> <p>Lower of quality based on capture and quality based on measurement</p>	<p>Overall quality of intervention cost estimate</p> <p>Lower of quality based on capture and quality based on measurement</p>
Intervention benefit	<p>Quality of capture</p> <p>Are these drivers included in the estimate?</p> <p>Healthcare cost for:</p> <ul style="list-style-type: none"> • Outpatient visits • Inpatient stays • Emergency department visits • Medications • Labs <p>Good, fair, or limited for capture of drivers if the total number of drivers not included in the estimate was 0–1, 2–3, or ≥4, respectively.</p>	<p>Quality of capture</p> <p>Are these drivers included in the estimate?</p> <ul style="list-style-type: none"> • Physical and mental healthcare cost for: • Emergency housing such as shelters • Judicial costs such as arrests, jails, and court proceedings • Welfare costs such as supplemental security income and local income support <p>Good, fair, or limited for capture of benefit drivers for total benefits if the total number of drivers not included in the estimate was 0–2, 3, or 4, respectively.</p>
	<p>Quality of measurement</p> <p>Identify where limitations occurred</p> <ul style="list-style-type: none"> • Population <ul style="list-style-type: none"> • Patients with mean age <50 years or >65 years • Baseline clinical indicators close to normal • Sample size <50 • Biased selection of patients • Design and internal validity <ul style="list-style-type: none"> • Intervention duration ≤6 months • Not randomized • No control group • Not a pre to post measure • Significant baseline differences between intervention and control 	<p>Quality of measurement</p> <p>Identify where limitations occurred</p> <ul style="list-style-type: none"> • Population <ul style="list-style-type: none"> • Participants that were not chronically homeless or disabled • Sample size <50 • Selection bias in study participants • Design and internal validity <ul style="list-style-type: none"> • Program duration <1 year • Inappropriate comparison or lack of comparison group • Lack of randomization • Post only measure of change • Differences between program and control participants at baseline

(continued on next page)

Table 2. Quality Assessment of Estimates for the Pharmacy-Based and Permanent Supportive Housing Interventions (*continued*)

Type of estimate	Pharmacy-based interventions for medication adherence	Permanent supportive housing with Housing First
	<ul style="list-style-type: none"> Data source Costs unrelated to CVD or CVD risk factors Valuation based on non-local prices and conditions Good, fair, or limited for measurement if the limitations totaled 0–3, 4–7, or ≥ 8, respectively 	Data source <ul style="list-style-type: none"> Self-reported outcomes Inappropriate data sources Valuations not based on local conditions or prices Good, fair, or limited for total benefits estimate in measurement if the limitations totaled 0–3, 4–9, or ≥ 10 , respectively.
	Overall quality of intervention benefit estimate Lower of quality based on capture and quality based on measurement	Overall quality of intervention benefit estimate Lower of quality based on capture and quality based on measurement
QALY, DALY, and modeled benefits	Quality of capture <ul style="list-style-type: none"> Not applicable for QALY and DALY since they have no components 	Quality of capture Not applicable for QALY and DALY since they have no components
	Quality of measurement Identify where limitations occurred <ul style="list-style-type: none"> Modeling assumptions <ul style="list-style-type: none"> Model inputs not drawn from trial or systematic review Model parameters not drawn from large longitudinal trials or systematic reviews QALY or DALY weights not based on published and peer reviewed methods Short model duration (<5 years) Models with non-standard structure or statistical properties Lack of sensitivity analysis Lack of discounting No fade-out of intervention effect Other shortfalls Good, fair, or limited for measurement if the limitations totaled 0–3, 4–8, or 9, respectively.	Quality of measurement Identify where limitations occurred <ul style="list-style-type: none"> Modeling assumptions <ul style="list-style-type: none"> Inclusion of participants that were not chronically homeless or disabled Model inputs were not drawn from actual trials Model parameters are not drawn from published studies Valuation was not based on local conditions Short model duration (<1 year) Inappropriate statistical methods were used Inappropriate comparison or lack of comparison group Lack of sensitivity analysis Valuations not based on local prices or conditions Good, fair, or limited for measurement if the limitations totaled 0–3, 4–8, or 9, respectively.
	Overall quality of QALY/DALY and modeled estimates Lower of quality based on capture and quality based on measurement	Overall quality of QALY/DALY and modeled estimates Lower of quality based on capture and quality based on measurement

CVD, cardiovascular disease; DALY, disability-adjusted life year; QALY, quality-adjusted life year.

CONCLUSIONS

The methods described in this paper were designed to provide transparency and improve the reliability of estimates that are used to derive a CPSTF economic finding. This may in turn augment the utility of CG economic reviews for communities making decisions about the allocation of limited resources to effective programs. These systematic economic review methods are applicable to a range of public health interventions and can be adjusted to the needs of specific users.

ACKNOWLEDGMENTS

The authors appreciate the useful comments and suggestions from 3 anonymous reviewers. The authors thank the members of our coordination team. The authors also acknowledge Yolanda Strayhorn, MLIS, from the Office of Library Science at the Centers for Disease Control and Prevention, for her assistance in library research and Jeffrey Reynolds, from the Community Guide Office for assistance with the figures. Names and affiliations of Community Preventive Services Task Force members are available at www.thecommunityguide.org/task-force/community-preventive-services-task-force-members.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

No financial disclosures were reported by the authors of this paper.

CREDIT AUTHOR STATEMENT

Sajal K. Chattopadhyay: Conceptualization, Formal analysis, Methodology, Supervision, Writing – review & editing. Verugheese Jacob: Conceptualization, Formal analysis, Methodology, Resources, Writing – original draft. David P. Hopkins: Conceptualization, Methodology, Writing - review & editing. Amy Lansky: Conceptualization, Methodology, Writing - review & editing. Randy Elder: Conceptualization, Writing - review & editing. Ned Calonge: Methodology, Supervision, Writing - review & editing. Allison E. Cuellar: Methodology, Supervision, Writing - review & editing. John M. Clymer: Methodology, Supervision, Writing - review & editing.

SUPPLEMENTAL MATERIAL

Supplemental materials associated with this article can be found in the online version at <https://doi.org/10.1016/j.amepre.2022.10.015>.

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