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A policy implementation study of earmarked taxes for mental health services: study protocol

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Abstract

Background Insufficient funding is frequently identified as a critical barrier to the implementation and sustainment of evidence-based practices (EBPs). Thus, increasing access to funding is recognized as an implementation strategy. Policies that create earmarked taxes—defined as taxes for which revenue can only be spent on specific activities—are an increasingly common mental health financing strategy that could improve the reach of EBPs. This project's specific aims are to (1) identify all jurisdictions in the USA that have implemented earmarked taxes for mental health and catalogue information about tax design; (2) characterize experiences implementing earmarked taxes among local (e.g., county, city) mental health agency leaders and other government and community organization officials and assess their perceptions of the acceptability and feasibility of different types of policy implementation strategies; and (3) develop a framework to guide effect earmarked tax designs, inform the selection of implementation strategies, and disseminate the framework to policy audiences.

Methods The project uses the Exploration, Preparation, Implementation, Sustainment (EPIS) framework to inform data collection about the determinants and processes of tax implementation and Leeman's typology of implementation strategies to examine the acceptability and feasibility strategies which could support earmarked tax policy implementation. A legal mapping will be conducted to achieve aim 1. To achieve aim 2, a survey will be conducted of 300 local mental health agency leaders and other government and community organization officials involved with the implementation of earmarked taxes for mental health. The survey will be followed by approximately 50 interviews with these officials. To achieve aim 3, quantitative and qualitative data will be integrated through a systematic framework development and dissemination process.

Discussion This exploratory policy implementation process study will build the evidence base for outer-context implementation determinants and strategies by focusing on policies that earmarked taxes for mental health services.

Keywords Policy implementation, Financing, Taxes, Mental health

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Purtle *et al. Implementation Science Communications*   (2023) 4:37

Page 2 of 12

Contributions to the literature

- Policy-focused research remains underdeveloped in the field of implementation science and there are a limited number of published study protocols focused on policy issues.
- This protocol provides an example of how a specific policy—those which earmark tax revenue for mental health services—can function as the focus of an implementation science study.
- Despite the increasing use of earmarked taxes for mental healthcare, there is scant research on the extensiveness of these policies or the nature of their implementation.
- This protocol illustrates how existing implementation science frameworks, constructs, and survey items can be adapted for policy-focused implementation research.
- This protocol details how legal mapping research methods can be integrated into a policy-focused implementation science study.

Background

Insufficient funding is frequently identified as a barrier to the implementation and sustainment of evidence-based practices (EBPs) [1–4]. As such, increasing access to funding is recognized as a promising implementation strategy [5].Policies that create earmarked taxes—defined as taxes for which revenue can only be spent on specific activities—are an increasingly common financing strategy that hold promise for improving the reach of EBPs [6–8]. However, little is known about how the design and implementation of earmarked tax policies might be optimized to reflect local contexts and also ensure that revenue is allocated for practices that are effective. This exploratory, mixed methods (QUANT➔ QUAL), policy implementation process study [9] will expand the evidence base for outer-context implementation determinants and strategies by focusing on the implementation of policies that earmark taxes for mental health services. The project uses the Exploration, Preparation, Implementation, Sustainment (EPIS) framework [10] to inform data collection about the determinants and processes of tax implementation and Leeman et al.'s typology of implementation [11] to examine the acceptability and feasibility of strategies that could support earmarked tax policy implementation. The project will contribute to a growing body of empirical research about health policy implementation in the USA.

Study aims

The study has three aims.

- *Aim 1: Identify all jurisdictions in the USA that have implemented earmarked taxes for mental health services and catalogue information about tax design.* Using recommended practices for legal mapping studies [12–14], key informant interviews and legal mapping will be conducted to identify policies that create earmarked taxes for mental health services and catalogue information on tax design.
- *Aim 2: Characterize local government and community organization leaders' experiences implementing earmarked taxes, understand the determinants of decisions about tax-funded programs, and assess the acceptability and feasibility of different types of implementation strategies.* A web-based survey will be conducted of 300 local (e.g., county, city) mental health agency leaders and other government and community organization officials involved with tax implementation. Approximately 50 semi-structured interviews will then be conducted with these leaders and officials in purposively selected counties.
- *Aim 3: Develop a conceptual policy implementation framework to guide effective earmarked tax designs, inform the selection of implementation strategies to increase the taxes' reach of EBPs, and disseminate the framework to relevant policy audiences.* An established, systematic process [15] will be used to integrate quantitative survey and qualitative interview data and develop a framework focused on the design and implementation of earmarked taxes for mental health. Then, using empirically-informed dissemination practices [16–21], we will disseminate the framework to policymakers and implementers in jurisdictions that have implemented the taxes.

Earmarked taxes as health policy strategy

Earmarked taxes are those placed on specific goods, services, or income for which revenue is dedicated to a specific purpose [6, 8, 22, 23]. Earmarked taxes have become increasingly common at state and local levels in the USA across policy areas for which the public strongly supports government intervention (e.g., transportation, education) [24]. The increasing popularity of earmarked taxes likely stems, at least in part, from decreases in public support for general tax increases and declines in trust of government (especially at the federal level) [25, 26]. Earmarked taxes often enjoy relatively strong public support because they guarantee that revenue will be allocated for

specific issues of public concern [24, 27], as opposed to being allocated at the discretion of government officials who are increasingly perceived as untrustworthy [25, 26]. Although these taxes have the potential to produce a net increase in spending on an issue by creating a new funding stream [28], this may not occur due to supplantation—the process through which spending on an issue is reduced from the general fund because the issue already has a separate and dedicated (i.e., earmarked) revenue source [29–32].

In the area of health, earmarked taxes have typically been applied on goods and services that produce harms to public health [33, 34]. In these cases, earmarked taxes have the dual goal of reducing consumption of the good or service *and* generating revenue for investments in public health. Widely studied examples of earmarked taxes in the area of health include excise taxes on sugar sweetened beverages [35, 36], indoor tanning [37], alcohol [38], and tobacco [39] with revenue earmarked for public health programs that address these issues.

Earmarked taxes for mental health services

In the area of mental health, earmarked taxes have been adopted with the goal of increasing funding for mental health services—which have historically been funded less generously than physical health services in the USA [40–44]. As described in a 2019 commentary [6], two US states—California and Washington—adopted high profile earmarked tax policies for mental health services in 2005. These policies, however, differ dramatically in terms of tax design and oversight.

In California, the Mental Health Services Act increased the income tax rate by one percentage point for households with annual income exceeding $1 million. Revenue is collected by the state and then allocated to all counties in the state using a formula that accounts for population size and other characteristics [45]. The California Mental Health Oversight and Accountability Commission oversees highly structured spending and reporting requirements. Studies have assessed the impact of the California tax and tax-funded programs on effectiveness outcomes (e.g., suicide death, mental illness stigma) [46–48] and implementation outcomes related to the adoption and sustainment of tax-funded services [49, 50]. Prior research has not, however, focused on the processes of tax implementation in California, perceptions of tax design, or perceptions of strategies that could improve implementation.

In contrast, Washington state law E2SSB-5763 provided counties with the ability to raise their sales tax rate by 0.1% percentage point, via referendum, to increase funding for mental health services. As of 2022, 28 of the 39 counties in the state had adopted the tax, with adoption occurring gradually across the state since 2005. Counties that adopt the tax are required to establish a therapeutic substance use disorder court [51] and report information about the amount of revenue generated to Washington State Department of Revenue. However, in contrast to California, counties monitor spending without structured state oversight and have fairly broad discretion over the specific services which are funded. Little research has investigated the implementation or effects of these taxes in Washington counties.

As the 2019 commentary also described, local jurisdictions in states such as Illinois, Colorado, and Missouri have also adopted policies that earmark taxes for mental health services. However, details about these taxes—or others than may exist across the USA—have not been systematically collected. It is plausible that additional jurisdictions will adopt policies earmarking taxes for mental health services as public concern about mental health is extremely high in the USA [52]. Furthermore, many US adults are willing to pay higher taxes to improve mental health services systems [53–55]. One 2017 survey found that 42% of respondents were willing to pay an additional $50 annually to improve the mental health service system [53]. A separate survey conducted the same year found that 58% were willing to pay an additional $50 for social services for people with serious mental illness [54]. A 2018 discrete choice experiment found that support for increased spending on mental health was higher than for other health and social issues [55]. It is within this context that policies that earmark taxes for mental health services have emerged as a financing strategies in the USA.

Policy is a growing area of implementation science research

Although policy implementation has been an area of focus in fields such as public administration and management research and political science since at least the mid-twentieth century [56–61], public policy has historically been understudied in the contemporary enterprise of implementation science in health [62]. However, interest in the area is rapidly growing. Implementation science researchers have recently published calls for a greater emphasis on policy in the field [9, 63–68], and reviews have cataloged measures and strategies for policy-focused D&I research [69–72]. Trials have tested policymaker focused dissemination strategies [73–80], and conceptual frameworks have been developed and refined for policy-focused implementation science [81, 82]. Definitions of implementation science concepts (e.g., implementation strategies) have been adapted for policy-focused work [83, 84], studies have evaluated the effects of policies on implementation outcomes [85, 86],

Purtle *et al. Implementation Science Communications*   (2023) 4:37

Page 4 of 12

and protocols have detailed studies that focus on policy dissemination and implementation [87–90]. This study contributes to this growing area of research in policy-focused implementation science.

Methods

This exploratory project uses a sequential mixed method (QUANT➔ QUAL) design and progresses across three phases (Fig. 1).

Conceptual frameworks

The project is guided by two D&I frameworks—the EPIS framework [10] and Leeman et al.'s implementation strategy typology [11]. EPIS is both a process and determinant framework that was developed for implementation research in public sector settings [91]. Acknowledging the multilevel and often non-linear nature of implementation research and practice, EPIS delineates key outer context, inner context, and innovation determinants that may influence implementation across the phases of exploration, preparation, implementation, and sustainment. EPIS will be used to inform assessment of local government and community organization leaders' experiences implementing earmarked taxes and perceptions of factors that influence implementation. More specifically, as shown in Fig. 2, EPIS informs the selection of variables in the domains of outer context determinants (cosmopolitanism and peer pressure), inner context determinants (implementation climate, role of organization in tax implementation, role of the individual within their organization), and innovations determinants (perceived attributes of the tax, drawing from Rogers's "attributes of innovations"[92]). EPIS also will be used to guide data interpretation regarding how these determinants are associated with perceptions of the impact of the tax and the acceptability and feasibility of strategies that
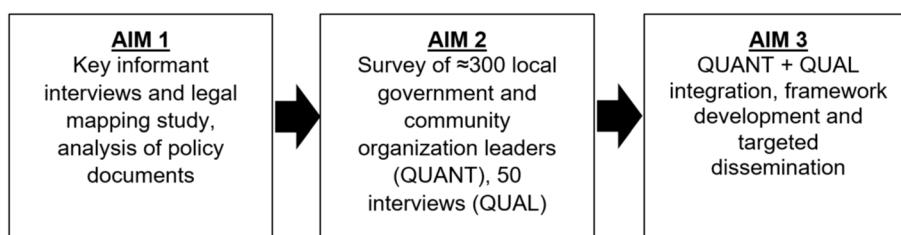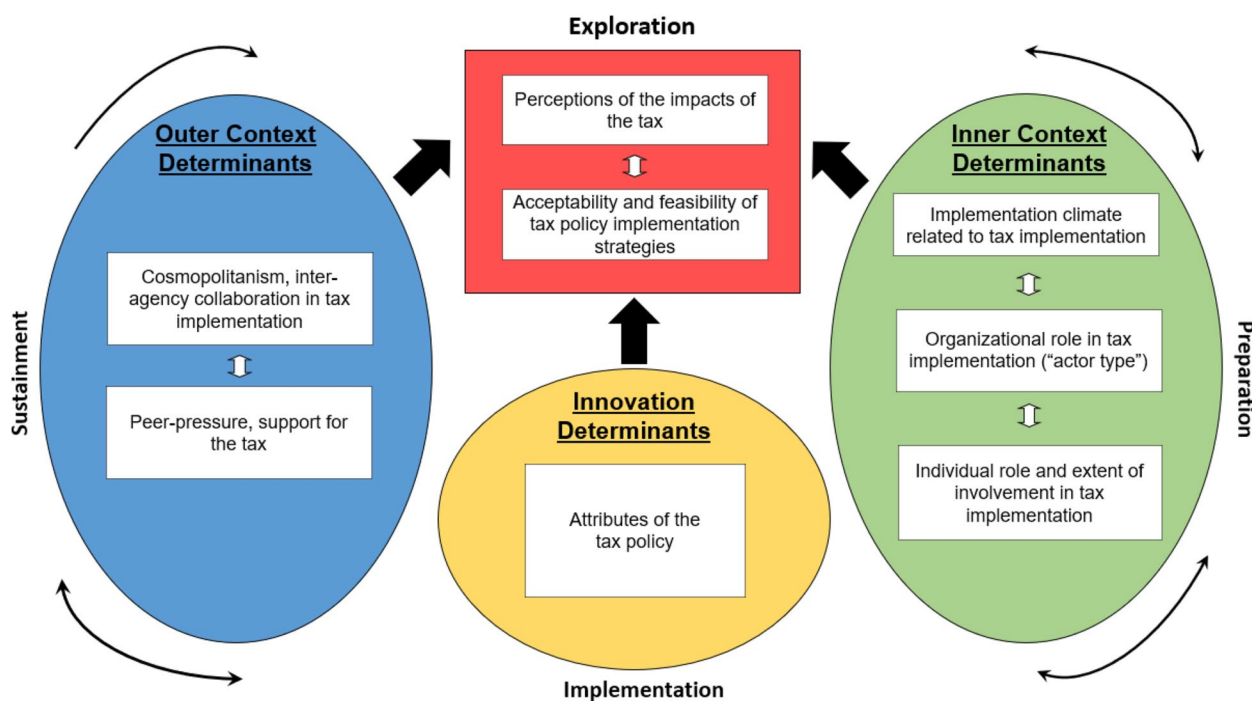

Fig. 1 Study process

Fig. 2 Study conceptual framework

Purtle *et al. Implementation Science Communications* (2023) 4:37

Page 5 of 12

could be used to help ensure that the tax increases the reach of EBPs. More details about these constructs and their measurement are provided below.

Leeman et al. [11] developed a five-domain classification system for implementation strategies from Powell et al.'s Expert Recommendations for Implementing Change compilation [5]. This typology will be used to develop a survey about the acceptability and feasibility of implementation strategies that could help earmarked taxes increase reach of EBPs. The five domains of the typology are as follows: [1] dissemination strategies (e.g., communicating information about EBPs), [2] implementation process strategies (e.g., adapting EBPs for context), [3] integration strategies (e.g., revising professional roles to support EBP delivery), [4] capacity-building strategies (e.g., technical assistance to support EBP delivery), and [5] scale-up strategies (e.g., training providers in EBPs). As noted below, all survey items assessing the acceptability and feasibility of these strategies will be explicitly anchored to the implementation of earmarked taxes for mental health services [11].

Aim 1 methods

Aim 1 methods consist of a legal mapping study to identify all jurisdictions in the USA that have implemented earmarked taxes for mental health services and cataloging information on tax design. Aim 1 methods reflect recommended practices for legal mapping studies [12–14].

Key informant interviews with subject matter experts

Approximately 12 key informant semi-structured interviews will first be conducted with policy directors of mental health professional associations (e.g., American Psychiatric Association), advocacy organizations (e.g., Mental Health America), and experts on tax law (e.g., the Tax Foundation). The purpose of the interviews will be threefold: [1] to identify jurisdictions that have implemented taxes, [2] to inform the search strings used to identify additional jurisdictions through legal databases and other sources, and [3] to inform development of the policy coding instrument. All interviews will be telephone or Zoom-based, recorded, transcribed, and analyzed using rapid, directed content analysis [93].

Tax policy identification, coding, and analysis

After finalizing search strings, we will search legal databases (e.g., HeinOnline, Cheetah tax repository), reports, and a range of municipal data sources to identify the text of policies that earmark taxes for mental health services. We will extract information on five key attributes of each tax: jurisdiction, year enacted, tax type (e.g., income, property, sales), tax rate, and amount of revenue generated annually. 2020 US Decennial Census estimates of population size within each jurisdiction will then be used to calculate estimates of annual revenue per capita. Property tax "millage rates," which are expressed dollars per $1000 property valuation, will be converted to percentages to facilitate consistent interpretation with sales and income tax rates. Descriptive statistics will characterize the attributes of the taxes across jurisdictions and brief narrative case studies will also be used to describe the taxes, their history, and synthesize any existing research related to tax evaluation.

Aim 2 methods

Aim 2 methods consist of a quantitative, web-based survey of 300 local (e.g., county, city) mental health agency leaders and other government and community organization officials involved with tax implementation in the jurisdictions that have implemented earmarked taxes for mental health, followed by a target sample of 50 semi-structured qualitative interviews in purposively selected jurisdictions.

Survey sample, recruitment, and data collection

In each jurisdiction identified as having an earmarked tax for mental health, we will identify local mental health agency leaders and other government and community organization officials who appear—based on their title as it relates to the tax—to be involved with tax oversight, decision making, implementation, and/ or service deliver. We will identify these individuals through Internet searches, contact databases maintained by practice partners (e.g., county mental health association with states), and databases of state local mental health officials compiled by the research team in prior research [94–96].

Everyone in the sample frame will be e-mailed up to eight times over an eight-week period with a unique link to complete the web-based survey in Qualtrics. All recruitment materials will the personalized to include the respondent's name and title and will concisely describe the earmarked tax in their jurisdiction. Telephone follow up will be conducted to ensure that the e-mails were received and to answer any questions about the survey. Survey recruitment will occur in two waves. The first wave will recruit individuals in the original sampling frame, and the second wave will recruit individuals identified through recommendations obtained from wave 1 surveys and individuals from any new jurisdictions identified after wave 1 survey recruitment has begun. If necessary to meet recruitment milestones, we will also circulate an open survey link via our practice

Table 1 Survey domains

Core domain	Sub-domain	Example item
Perceptions of the impacts of the earmarked tax	n/a	"Rate the extent to which you agree with the following statements about the impacts of the earmarked tax for mental health in your jurisdiction… The tax increases funding for direct mental health/social services"
Innovation determinants	Attributes of the tax	"Rate the extent to which agree with the following statements about the characteristics of the earmarked tax for mental health in your jurisdiction… The rules related to how revenue from the tax can be spent can be easily changed to address emergent needs"
Inner context determinants	Organizational role in tax implementation ("actor type")	"Which of one the following categories most accurately describes your organization's role within the context of implementing the earmarked tax… Providing direct mental health and social services with tax revenue"
	Individual role and extent of involvement in tax implementation	"Rate the extent to which have you have personally been involved with the following activities… Making decisions about what services to fund with tax revenue"
	Implementation climate related to tax implementation	"Indicate the extent to which you agree with each of the statements below about your organization… One of this organization's main goals is to use evidence-based practices effectively with earmarked tax revenue"
Outer context determinants	Cosmopolitanism, inter-agency collaboration in tax implementation	"Indicate how often you collaborate with each of the following on issues related to implementation of the earmarked tax…. Local child welfare agency/child protective services"
	Peer-pressure, support for the tax	"Rate the extent to which you agree that there is strong support for the tax among… The general public in my jurisdiction"
Acceptability and feasibility of policy implementation strategies	Acceptability of strategy	"Dissemination strategies: These strategies entail your organization communicating information to mental health service organizations to increase leaders and providers knowledge and improve their attitudes about evidence-based practices that can be funded with earmarked mental health tax revenue… Dissemination strategies meet my approval"
	Feasibility of strategy	"Capacity-building strategies: These strategies entail your organization increasing the capacity of mental health service organizations to select and integrate evidence-based practices funded by earmarked mental health tax revenue and evaluate their impacts (e.g., by enhancing the motivation and self-efficacy of leadership and direct service providers) Capacity-building strategies seem easy to use"

partners (e.g., state and county mental health professional associations).

Survey measures

Table 1 shows the domains of the web-based survey (survey as Supplemental File 1). The survey is designed with the goal of having a low response burden (i.e., take < 15 min to complete) while covering five conceptual areas—spanning domains of the EPIS framework and Leeman et al.'s typology of implementation strategies. All items will be anchored in reference to the earmarked tax for mental health in the respondent's jurisdiction. Prior to fielding, the survey instrument will be piloted with five people who have been involved with the implementation of policies that earmark tax revenue for mental health services.

Perceptions of the impacts of the earmarked tax

These perceptions will be assessed by 10 items that ask respondents to indicate the extent to which they agree with statements about positive and negative impacts of the tax. These items will be informed by aim 1 key informant interviews and literature on the potential benefits and drawbacks of earmarked taxes [6, 8, 22–32]. Perceptions will be assessed on Likert scales and those focused on negative impacts will be reverse coded. If internal consistency is reasonable (i.e., $\alpha \geq 0.70$), these items will be summed to create an aggregate score of the perceived benefits of the earmarked tax for mental health within the respondent's jurisdiction, in which a higher score indicates greater perceived benefit.

Inner context determinants of tax implementation

Measures in this domain will characterize organizational and individual-level factors that might influence real and perceived implementation outcomes. *Implementation climate* related to the tax will be assessed using an adapted version of the Educational Support for Evidence-based Practice sub-scale ($\alpha = 0.84$) of the Implementation Climate Scale [97]. These items will be used to create a mean score. Respondents' perceptions of *their organization's role in the tax implementation* will be assessed by asking them to identify one of three roles, each of which corresponds with one of the three actor types in Leeman et al.'s typology (i.e., delivery system actors, support system actors, synthesis and translation system actors). Respondents' *individual roles in tax implementation processes* will be assessed by seven items that assess the extent of involvement in different activities related to tax implementation. If internal consistency is reasonable (i.e., $\alpha \geq 0.70$), we will calculate the mean of these scores to create an aggregate measure of involvement in tax implementation, in which a higher score indicates greater involvement.

Outer context determinants of tax implementation

Measures in this domain will characterize perceptions of external factors that could have real and perceived impact on implementation outcomes of the earmarked tax. The selection of constructs informed by a review of outer-context measures in mental health implementation research [71]. *Cosmopolitanism* will be measured by assessing the frequency inter-organization collaboration between the respondent and six external organizations on issues related to implementation of the earmarked tax. These items have been used in research with county mental health agency officials, where they demonstrated high internal consistency ($\alpha = 0.84$) and were strongly and independently associated with the frequency of using research evidence in policy implementation. We

will calculate the mean score across these items to create an aggregate score. *Peer pressure* will be measured by five items which assess the extent to which respondents perceive five groups (e.g., the general public, policymakers, consumers of services) as strongly supporting the earmarked tax. This measure is conceptualized as an indicator of the sociopolitical context in which policy implementation occurs [98, 99].

Innovation determinants

Drawing from the concept of *attributes of innovations* in Rogers' theory of the Diffusion of Innovations, the survey will assess perceptions of the earmarked tax across the five dimensions: complexity, observability, trialability, compatibility, and relative advantage. These constructs have been assessed in prior mental health policy implementation research [100]. Each dimension will be assessed by two items. If internal consistency is reasonable (i.e., $\alpha \geq 0.70$), we will sum items within each dimension to create attribute of innovation sub-scales and also sum responses across all items to create an aggregate measure of perceptions of the attributes of the tax. Items will be coded so that a higher score equates to more favorable perceptions of the attributes of the tax.

Acceptability and feasibility of policy implementation strategies

Measures in this domain will assess attitudes towards the acceptability and feasibility of respondents using different types of implementation strategies to increase the reach of EBPs with tax revenue. These constructs will be assessed by Weiner et al.'s measures of acceptability (four items, $\alpha = 0.85$) and feasibility (four times, $\alpha = 0.89$) [101]. Respondents will rate the acceptability and feasibility of using the five types of implementation strategies proposed in Leeman et al.'s implementation strategy taxonomy (Dissemination strategies, Implementation process strategies, Integration strategies, Capacity-building strategies, and Scale-up strategies) [11]. Each type of strategy will be concisely defined in the survey in relation to the earmarked tax policy. We will sum responses to calculate aggregate acceptability and feasibility scores for each type of implementation strategy.

Analysis of survey data

There will be at least two primary sets of analyses. In one set of analyses the dependent variable will be perceptions of the impacts of the earmarked tax. The independent variables will be inner context, outer context, and innovation variables. Multivariate regression models will produce adjusted estimates of associations between these constructs and perceived impacts of the

tax. These analyses will identify potential targets for implementation strategies (e.g., improve implementation climate related to the tax) and tax design (e.g., refine/develop taxes with attributes that are perceived more favorable) that could enhance the perceived and actual benefits of earmarked taxes for mental health services.

In the other set of analyses, the dependent variables will be perceptions of the acceptability and feasibility of each type of implementation strategy and independent variables will be inner context, outer context, and innovation variables. These analyses will shed light on the types of strategies that could be most readably deployed to improve the reach of EBPs with earmarked tax revenue in different contexts. Both sets of analyses will assess heterogeneity in the direction and magnitude of associations by respondent role/level of involvement in tax implementation and the "actor type" of their organization.

Interview respondents, recruitment, and qualitative data collection

Interviews will be conducted in eight or more tax implementing counties, at least four in California and four in Washington. We focus on these two states because both were passed in 2005 but vary dramatically in tax design [6]. Interviews may also be conducted in additional states based on aim 1 legal mapping findings. Counties will be selected in consultation with practice partners considering factors such as county population size and rural/urbanicity. The survey contact database will be used to identify potential interview respondents, as well as a snowballing recruitment strategy in which interview respondents will be asked if there are other individuals in their county we should interview about tax implementation. Approximately 50 interviews will be conducted. This number should allow for thematic saturation across about four strata of interview respondents [102], varying across attributes such as tax design and rural/urban setting.

Interview guide development and analysis

A semi-structured interview guide will include 7–9 open-ended questions, each with multiple probing questions (interview guide as Supplemental File B). Interview questions will focus on furthering understanding perceptions of attributes of the tax, how decisions are made about which services and programs to fund with tax revenue, and general attitudes about earmarked taxes as a mental health financing strategy in the USA. Interview data will primarily be analyzed using the framework development process detailed below.

Aim 3 methods

Aim 3 methods involve a systematic framework development process [15] to integrate quantitative and qualitative data. The overarching *objective of this process is to develop a conceptual policy implementation framework* to improve tax design and guide the selection implementation strategies that can help ensure that earmarked taxes increase the reach of EBPs in community behavioral health settings. According to Nilsen's typology of D&I frameworks [103], the product will be both a *determinants framework*, as it will depict barriers and facilitators to earmarked tax dollars increasing access to EBPs, and a *process framework*, as it will provide concrete guidance about specific implementation strategies that might be well-suited for different contexts.

Analysis of interview data, integration with survey data, and framework development

Framework development will be guided by Jabareen's six step process for framework development [15].

1. *Review quantitative findings and relevant frameworks.* This step serves to identify, a priori, concepts that have potential utility in the framework. Key findings from the quantitative survey will be transformed into preliminary concepts (e.g., association between perceptions of the flexibility of tax spending and perceived benefits of the tax) with names and definitions. Existing policy D&I frameworks, such as recent advances in integration of policy into the EPIS framework [82], policy implementation frameworks from fields public administration and management research and political science, and other scholarship on policy implementation will be used to identify potentially important concepts.
2. *Read, code, and categorize interview data.* This step consists of organizing interview data into categories at a low level of abstraction. Transcripts will be read by two coders who will assign sections of text to inductively generated categories and create category names and definitions.
3. *Establish core concepts.* This step entails coding transcripts at a higher level of abstraction and creating core concepts that reflect commonalities between multiple categories. Concepts will be created through an iterative process using analytic techniques such as coding matrices, quote tables, and searching for divergent findings.
4. *Create framework.* The purpose of this step is to synthesize quantitative and qualitative findings and create a conceptual framework that provides a comprehensive understanding of barriers and facilitators to

Purtle *et al. Implementation Science Communications* (2023) 4:37

Page 9 of 12

earmarked tax dollars increasing reach of EBPs, offering concrete guidance about specific implementation strategies that might work well in different contexts. To achieve this, a diagram will be created that depicts sequences, and inter-relationships among concepts related to inner context, outer context, and innovation determinants.

Framework dissemination

A two-page summary of the framework, complete with recommendations for tax design and implementation strategies that are perceived as acceptable and feasible, will be created. Findings from policymaker-focused dissemination research will inform decisions about the content of the summary and channels through which it is distributed [16–21]. The summary will be tailored for jurisdictions and e-mailed to policymakers and implementers (e.g., state legislators, oversite officials, local mental health agency leaders) as well as intermediary organizations.

Discussion

The study may encounter a series of logistical challenges. In aim 1, potential challenges relate to the fact that local (e.g., county, city, township) policies are not captured as routinely in national legal databases than state policies. For this reason, a wide range of data sources will be searched and interviews with key informants will be leverage to identify all policies that earmark taxes for mental health services. Some districts may not have a retrievable record of the earmarked tax revenue and/or date of enactment. Another aim 1 challenge relates to identifying tax revenue information that is earmarked *specifically for mental health* as opposed to mental health in addition social services, which may be co-funded with earmarked tax revenue. In aim 2, challenges will relate to identifying individuals involved with earmarked tax implementation in each jurisdiction, their up-to-date contact information, and achieving a reasonable response rate. Strategies such as personalizing e-mail communication, conducting telephone follow-up, and working with professional associations to endorse the survey will be used to help achieve a reasonable response rate.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s43058-023-00408-4.

Additional file 1. Domains of the web-based survey.

Additional file 2. Interview guide.

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