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Accounting for Indirect Costs in Public Health Cost Analyses

Abstract

Background. There is a gap in research regarding the resources needed to deliver public health activities, which inhibits informed decision making around investments in public health and the allocation of funds among activities. When conducting cost analyses in public health, it is important to include costs from all cost components, including personnel, non-personnel, and indirect costs. However, defining, identifying, and measuring indirect costs is challenging and can impede studies of this type. *Purpose.* The purpose of this pilot study is to create a catalog of the methodologies public health researchers have used to account for indirect costs. *Methods.* We surveyed the final products submitted by the eleven practice-based research networks who received funding from the Robert Wood Johnson Foundation to explore the delivery and cost of public health activities for their indirect cost inclusion method. The primary investigators were contacted to verify their methodology. Ten of the 11 networks (91%) could be reached. *Results.* Four of the networks used a pre-negotiated rate the health department had with the state agency. Three of the networks used a data collection instrument that had public health administrative staff estimate these costs. Three of the networks did not include indirect costs in their analyses. *Implications.* Although challenging, it is important to include indirect costs in public health cost analyses as they are a real cost to public health departments and research findings without these costs have limited applicability. This review can assist researchers by reviewing approaches previously used by public health researchers.

Keywords

indirect costs, indirect rates, public health cost estimation

Cover Page Footnote

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INTRODUCTION

There is a gap in research around the resources needed to deliver public health services.¹ This lack of knowledge inhibits effective policy and decision making regarding the necessary funding to support the public health infrastructure.² This lack of evidence also impedes public health agencies in allocating their funds to individual activities and determining which activities are a good use of their limited resources.³ This gap in research partially exists due to the challenges in calculating public health costs. One of the biggest challenges is estimating indirect costs. Indirect costs are those costs necessary to run an agency but are not attributable to a particular public health activity or service. Examples of indirect costs include office space, computers, utilities, and those costs associated with the general administration of the health department such as the salaries for the human resources department and health officer.

When conducting cost analyses, it is important to include costs from all cost components: personnel, nonpersonnel, and indirect. Personnel and nonpersonnel costs are typically considered direct costs and are easier to capture through primary data collection or reviewing existing records. Defining, identifying, and measuring indirect costs are less explicit. Indirect costs can vary widely between agencies and public health activities. Variation also exists in what is defined as indirect. Previous research has found that many agencies do not classify indirect expenses in a detailed manner, which limits the ability to measure these costs appropriately and often leads to their omission from cost analyses.⁴ The objective of this pilot study is to review the methodologies researchers have used to account for indirect costs in public health cost analyses.

METHODS

To better understand the range of methods used to estimate indirect costs by public health researchers, a survey was done on the eleven practice-based research networks (PBRNs) who received funding from the Robert Wood Johnson Foundation to explore the delivery and cost of public health activities. Ten of the eleven PBRNs (91%) are in decentralized states and one PBRN is in a shared-governance state. A review was completed on the final products submitted by these networks to the National Coordinating Center for PHSSR for their primary study objective and their indirect cost inclusion methodology. The primary investigators for each funded proposal were contacted in July 2015 to verify their indirect cost methodology. Ten of the 11 networks responded to the survey, resulting in a response rate of 91%. The funded proposals calculated and compared variation in the cost of a broad array of public health services, including communicable disease surveillance and investigations, child immunizations, community needs assessments, sexually transmitted infection services, quality improvement initiatives, tobacco prevention, and other foundational public health services. The different methodologies for the inclusion of indirect costs were reviewed and are presented here.

RESULTS

Variation existed in how each funded proposal accounted for indirect costs; this is displayed in Table 1. Four of the networks used a previously negotiated rate the local agency had with the state health department. One of these networks used a flat rate for all of their study participants (25% of salary and benefits) which was approved by the state health department for the majority of their participating counties. Another network assigned a different indirect rate percentage to each participating county based on their negotiated rate with the state health department and used missing value imputation to impute rates for counties that did not have a negotiated rate. Three

Table 1. Methods used by public health researchers to account for indirect costs

Category	n(%)
Did not include	3(30)
Pre-existing negotiated rate	4(40)
Survey public health staff	3(30)

other networks used a modified version of the Substance Abuse Services Cost Analysis Program (SASCAP) survey,⁵ which is a data-collection tool that gathers information on personnel costs, nonpersonnel costs, and indirect costs. This instrument typically requires the public health finance and administrative staff to estimate the appropriate indirect costs, often by reporting an indirect rate that is applied to all direct costs or by reporting an actual dollar amount. The other three networks focused only on direct costs, citing difficulty in determining indirect costs due to the lack of data and inconsistency in this area. Table 2 highlights the range of indirect rates used by each network, with the average indirect rate ranging from 9% to 28%.

Table 2. Range of indirect rates used by each network

Network	Method	Average indirect rate (%)	Minimum indirect rate (%)	Maximum indirect rate (%)
1	Negotiated Rate	25	25	25
2	Negotiated Rate	28	13.5	50.75
3	Negotiated Rate	9	3	12
4	Negotiated Rate	16	15	22
5	Survey	9	0	19
6	Survey	Not all Reported a Rate	Not all Reported a Rate	Not all Reported a Rate

Note: Data could not be retrieved from one network that surveyed public health staff. Network 6 reported that their participants estimated indirect costs in multiple ways, some of which applied an indirect rate to certain costs, while others were able to report specific dollar amounts and thus did not use a rate.

IMPLICATIONS

The reviewed studies showed that two primary methodologies were used to include indirect costs in public health cost analyses: existing negotiated rates and survey via the SASCAP. The feasibility of these approaches was not explored in this pilot study. Future research should explore the experience of using these methodologies to determine if PBRNs would suggest these methods and to understand the resources needed to employ each method. Additionally, the generalizability of these methods is also unknown as some of these methods may be feasible for some states (i.e., data availability) but not for others. Further, wide variation in the indirect rates between and within studies was evident, potentially due to differences in what is included as indirect or measurement error. More research is needed to explain this variation and explore whether or not variation in indirect rates translates to variation in indirect costs. Because of these limitations, we cannot recommend a particular methodology. However, we show there are two approaches previously used by researchers. Further research is needed to identify best practices and evaluate the feasibility of the different approaches for different jurisdictions.

SUMMARY BOX

What is already known about this topic? The need to determine the cost of public health activities is understood, yet difficulties in calculating an accurate depiction of costs exists due to the challenges defining and measuring indirect costs.

What is added by this report? This review describes methods public health researchers have used to account for indirect costs in their cost analyses, often by applying a pre-existing negotiated rate with a funding entity or using a data-collection instrument that has administrative staff estimate these costs.

What are the implications for public health practice, policy, and research? Most of the reviewed studies did calculate indirect costs and include them in their cost studies. Two different methodologies were employed: using existing negotiated rates and direct calculation via SASCAP survey. Further research is needed to understand the validity and reliability of the two methods.

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