Developing a Tool to Assess Administrative Evidence-Based Practices in Local Health Departments

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Abstract

There is need for assessing the practices undertaken by local health departments in order to improve the implementation of evidence-based actions. This paper describes the development and testing of a survey instrument for assessing Administrative Evidence-Based Practices (A-EBPs) in Local Health Departments. A-EBPs identified through a review of the literature were used to develop a survey composed of nine sections and tested in a sample of local health department practitioners. The resulting tool showed adequate test-retest reliability and internal consistency. Practitioners and researchers may apply this tool in practice-based and evaluation research.

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Introduction

The body of evidence on effective interventions to increase population health is rich and increasingly accessible. Nonetheless, a gap between knowledge and action (implementation) is still a matter of concern for public health practice.[1] The use of evidence-based management practices is recognized as an important process to improve public health performance at the local level. This process is also in accordance with the Public Health Accreditation Board Standards that highlight the importance of using the best available evidence by health departments.[2] To address this need, a recent literature review has identified administrative evidence-based practices (A-EBPs) that might be used to improve practice.[3] This set of practices, classified as moderate to high priority, was examined according to their potential for implementation within a few years at a relatively low cost. [3] The high priority A-EBPs covered five major domains including workforce development, leadership, organizational climate and culture, relationships and partnerships, and financial processes. A-EBPs deemed moderate priority because they are more costly, may take longer to implement, or are outside the control of local health departments covered four domains (e.g. workforce size and composition, health department oversight and infrastructure, inter-organizational relationships, and financial characteristics). To advance understanding of A-EBPs there is a need for practical and reliable measures that could be used in practice-based and evaluation research. This paper describes the development and testing of a survey tool for assessing A-EBPs.

Methods

The A-EBPs online survey included nine sections (Table 1) with a total of 54 questions that were new and based on a framework developed through a literature review.[3] Two domains included questions with a dichotomous response (yes or no) and seven domains included Likert scale type questions (seven or eleven points). The draft survey was reviewed by the core research team (n=11) at the Prevention Research Center in St. Louis and by experts (n=2) from the National Association of County & City Health Officials (NACCHO) and the National Coordinating Center for Public Health Systems and Services Research. After three rounds of reviews the survey underwent cognitive response testing (CRT) with twelve experts in the field. The survey was then refined by the core research team based on input received from the CRT and programmed into Qualtrics for web-based data collection.

A random sample of practitioners (n=90) from local health departments was selected for a test-retest study (Table 2). The sample was predominantly comprised of women, with 50 years of age or more, and having at least a master's degree. Overall the sample was well experienced in their position and was largely composed of top executives or coordinators. Thirty-eight participants from the sample group completed the online survey a second time at an interval of at least 14 days (average 24.5± 10.3 days). To examine test-retest reliability, Cohen's kappa statistics were calculated for dichotomous questions and one-way model intra-class correlation

coefficients (ICC) were used for the Likert scale questions. Internal consistency was also examined in the domains composed by Likert scales through Cronbach's alpha. Finally, agreements for each domain were examined using adjectival ratings with the following suggested categories: 1.0–0.8 (almost perfect), 0.8–0.6 (substantial), 0.6–0.4 (moderate), 0.4–0.2 (fair), 0.2–0.0 (poor) [4]. The questionnaire is available at: http://prcstl.wustl.edu/research/Pages/LEAD-public-health-project.aspx

Results

Table 1 summarizes the reliability coefficients for the A-EBP survey items by each section of the tool. Overall, the large majority (41/54=76%) of the items demonstrated substantial to nearly perfect reliability, and no items had poor reliability. Mean test-retest reliability was above .64 among all sections but one (Workforce development= .41). Section 1 had the lowest item performance with two out of four questions presenting fair reliability. Section 4 (Relationship & partnerships) presented the highest item reliability values with all items being classified as substantial. For all other sections the individual item performances were largely classified as substantial or nearly perfect with 70% of all items on these categories.

Regarding internal consistency, Cronbach's Alpha ranged from .67 to .94 in the 7 Likert scale sections. Of the 7 Likert scale sections, 5 presented at least acceptable internal consistency (≥ .70) with 3 of the 5 classified as good (≥ .80). The sections "Diffusion attributes" and "Views related to EBDM" presented slightly lower internal consistency, which was likely influenced by the small number of questions within these sections.

Implications

Administrative and management practices play a key role in the quality and improvement of local public health systems. [2, 3, 5] Leadership practices influence workforce development, organizational climate, use of resources, partnerships, and application of evidence-based decision making (EBDM) including implementation of evidence-based programs and policies. [1] Since little is known about feasibility and implementation of A-EBPs in local health systems, it is important to measure A-EBPs. Creation of a reliable easy-to-use questionnaire can advance knowledge and support local health departments' quality improvement efforts. The instrument described in this paper is available in a user-friendly fashion allowing practitioners to measure their health department's progress towards the implementation of A-EBPs. Local assessment and implementation of A-EBPs may help health departments improve the accreditation process and also optimize resources through likely synergy between A-EBP elements. [4] By advancing the implementation of A-EBPs local health departments may improve public health practice thereby benefiting the populations they serve. Use of this survey tool will further the understanding of factors that are more likely to affect local public health performance and contribute to a better translation of science into evidence-based practices.

Summary Box

- The use of evidence-based management practices is recognized as an important process to improve public health performance at the local level.
- Administrative evidence-based practices (A-EBPs) that may improve practice have been recently identified in the literature but little is known about measurement and implementation of such practices at the local level.
- Creation of reliable easy-to-use measurement tools can advance knowledge and support local health departments' quality improvement efforts.

References

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Table 1. Description and reliability coefficients of the Items in the Administrative Evidence-Based Practices Survey

Domain	Number of questions	Scale	Reliability Coefficient		Number of Items in Reliability Range[*]					Cronbach's Alpha
			Mean	Min, Max	.00-.19	.20-.39	.40-.59	.60-.79	.80-1.00	
					Poor	Fair	Moderate	Substantial	Nearly Perfect	
1.Workforce development	4	Dichotomous (yes/no)	.44[†]	.23-63	0	2	1	1	0	n.a.[¶]
2.Leadership	5	Likert - 7 points (strongly disagree to strongly agree)	.73[§]	.54-.92	0	0	1	3	1	.75
3.Organizational climate & culture	4	Likert - 7 points (disagree to agree)	.65[§]	.56-.72	0	0	1	3	0	.81
4.Relationships & partnerships	3	Likert - 7 points (strongly disagree to strongly agree)	.70[§]	.60-.76	0	0	0	3	0	.75
5.Financial	2	Dichotomous (yes/no)	.85[†]	1.00-.70	0	0	0	0	2	n.a.[¶]
6.Diffusion attributes	10	Likert - 7 points (strongly disagree to strongly agree)	.66[§]	.43-.81	0	0	1	8	1	.69
7.Views related to EBDM	6	Likert - 7 points (strongly disagree to strongly agree)	.68[§]	.51-.83	0	0	2	3	1	.67
8.Importance of EBDM	10	Likert - 11 points (unimportant to very important)	.64[§]	.42-.77	0	0	2	8	0	.94
9.Availability of EBDM	10	Likert - 11 points (not available to very available)	.66[§]	.35-.83	0	1	2	3	4	.89

*Kappa and ICC values were used to calculate test-retest reliability coefficients

† Kappa values were used in this calculation

Table 2. Descriptive characteristics of test-retest participants at baseline and repeated survey completion

Variable	Characteristic	n*	%	n†	%
Gender	Men	37	41.1	14	36.8
	Women	53	58.9	24	63.2
Age	20-29	3	3.3	1	2.6
	30-39	4	4.4	1	2.6
	40-49	14	15.6	5	13.2
	50-59	44	48.9	23	60.5
Education	MSc/MPH/other	46	51.1	22	57.9
	PhD/MD/Other	8	8.9	4	10.5
Position in the local health agency	Top executive, health director or equivalent	66	73.3	25	65.8
	Administrator, deputy or assistant director	21	23.3	9	23.7
	Division/Program Manager	2	2.2	3	7.9
	Technical expert position (e.g. epidemiologist)	1	1.1	1	2.6
Years working in the current position	≤ 5 years	24	26.7	10	26.3
	6 to 10 years	25	27.8	12	31.6
	≥ 11 years	41	45.6	16	42.1
Years working in public health	≤ 5 years	6	6.7	2	5.3
	6 to 10 years	11	12.2	6	15.8
	≥ 11 years	73	81.1	30	78.9

*Participants at the baseline; †Participants in the second interview (re-test)