

**Medical Directors of Local Health Departments:
Challenges, Insights, And Opportunities**

By

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ABSTRACT

Background:

The role of local health departments (LHDs) in addressing cancer prevention and control (CPC) is not well defined. Only general information about LHD services is described in the periodic national survey of LHDs conducted by the National Association of City and County Health Officials (NACCHO). The objective of this analysis is to describe the role and function of North Carolina (NC) LHDs in CPC.

Methods:

A survey of medical directors of NC LHDs (n= 85) was conducted between September and December 2018, to understand both the services provided by the LHD and medical director and the necessary training to provide those services. Nonrespondents received several reminders by email, and two phone call attempts were made to the health departments with no response to email reminders. The response rate was 70.6%.

Results:

Preventive counseling around tobacco cessation, nutrition, and physical activity is provided by 77.6%, 94.8%, and 82.8% of LHDs respectively, with 27.6%, 19.0%, 24.1% of LHDs having these services provided by medical directors directly either exclusively or along with other staff. Cancer screening is provided by 98.3% of LHDs. Most

commonly is cervical cancer screening (98.3%), and other cancer screening (93.3%). In 51.7% of LHDs, screening is provided by medical directors directly.

Conclusions:

Cancer prevention activities are fairly common among NC LHDs, and cancer screening is almost universal. Comparing data from this survey of NC LHDs to the 2016 national NACCHO survey, rates of cancer screening may be higher in NC. Nationwide, 32% of LHD's perform cancer screening; while our survey reports 98.2% do so. The NACCHO survey does not include comparable questions on cancer prevention services.

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Background

The role of local health departments (LHD) in the United States is not well-defined. It is known that there is significant variation in LHD services and responsibilities across states and regions (1). Similarly, the specific activities or skills of LHD medical directors has not been described. To make sure the public health workforce has the necessary skills to meet population health needs, public health leaders have called for research focused on the public health workforce (2). Existing literature on the training needs of the public health workforce indicate the greatest needs for improvement are in managerial, leadership, and policy development skills (3). However, this literature focuses on a variety of public health professionals that can include physicians, nurses, epidemiologists, dentists, and researchers in a variety of settings; we could not identify any literature of training needs specifically of medical directors in LHD's. The National Association of County and City Health Officials (NACCHO) has performed a national survey of local health departments every 2-3 years since 1989, but the only available information about medical directors from this survey is whether the medical director position is separate from the top executive and whether the medical director works at the local health department full-time or part-time (4). Data on the role and function of health departments and their medical directors are needed to better meet the population health needs of geographically defined populations. This data can also be used to customize educational opportunities in medical schools and residencies, as well as develop workforce development plans for health departments and ensure medical directors are well equipped to address current and emerging public health needs (5)(6).

To address this information need, we conducted a survey of North Carolina LHD medical directors. The purpose of the survey is to gather information about LHD medical director training, activities of the LHD and the role of the medical directors in those activities, and the medical directors' insights into improvement strategies, challenges, and opportunities. This survey will help graduate medical education programs, such as Preventive Medicine and Family Medicine residencies, better train and support physicians who will assume these positions.

Methods

The survey targeted North Carolina local health department medical directors. There are 85 local health departments for the 100 counties in North Carolina. We obtained a list of health departments in the state from the internet, used internet sources to identify phone numbers and administrative directors, and made phone calls to each health department to obtain the name of the medical director and contact information (telephone number and e-mail). The survey was fielded in September to December, 2018. An e-mail invitation (Appendix A) was sent to all available e-mail addresses using Qualtrics Software. Three subsequent Monday weekly reminders were then sent out using Qualtrics to those who had not yet responded (Appendix B-D). Starting week 5 of the survey, phone calls were attempted to the health departments with no response in order to send reminders to the medical directors. Phone calls were continued into week 6 until all medical directors who had responded received two phone call attempts. Participants were told that they would receive a \$20 gift card if they participate, and received a \$20 Target E-gift card after they completed the survey. Requests for a mailed were accommodated (2 in total). The response rate was 70.6% (60 of 85 surveys sent).

The survey (Appendix E) was developed based on several overarching research questions (Figure 1):

1. Who are the physician medical directors in terms of residency training, board certification, and other credentials, and what is the LHD medical director role (e.g., activities and %FTE: clinical, administrative, program, policy)?

2. What are the LHD clinics which are staffed/supervised by the medical director?
3. What services are not offered but should be?
4. What competencies are necessary to perform the role of a LHD medical director?
5. What are the relationships between the LHD and clinical entities in the community?
6. What are the relationships between the LHD and other providers of social services?
7. What is the role of the medical director in those partnerships?
8. What are the challenges and opportunities of LHD medical director physicians in NC?

The survey was then edited and revised by the group of investigators and three North Carolina local health department medical directors.

Open-ended responses will be coded and summarized into themes. Quantitative responses will be analyzed using Microsoft Excel to generate descriptive statistics. Qualtrics report was used to describe question 20 about the services provided by local health departments. The University of North Carolina Institutional Review Board reviewed the study protocol and determined that this study qualified as exempt research.

Results

Preliminary analyses are presented for one specific content area, cancer prevention and control. Out of 85 North Carolina local health departments, 60 medical directors completed the survey (70.6% response rate). Table 1 summarizes the results of the survey question “*Which of the services below are provided by your health department, and by whom?*” that pertain to cancer prevention and control.

Cancer prevention activities were fairly common among NC LHDs. Tobacco cessation treatment, nutrition, and physical activity counseling are provided by 77.6%, 94.8%, and 82.8% of LHDs respectively by medical directors, other staff, or both (with 27.6%, 19.0%, 24.1% of LHDs having these services provided by medical directors directly).

Cancer screening (most commonly, cervical cancer screening) is very common among NC LHDs. It is offered in 98.3% of LHDs by medical directors, other staff, or both. In 51.7% of LHDs, screening is provided by medical directors directly. Pap smears are provided by 98.3% of LHDs by medical directors, other staff, or both (with 50.0% of services provided by medical directors directly). Colposcopies are provided by 41.4% of LHDs by medical directors, other staff, or both (with 17.2% of services provided directly by medical directors).

Table 1- Cancer Prevention and Control Activities in NC Local Health Departments

Q20 Which of the services below are provided by your health department, and by whom?

Question	Provided by yourself directly	Provided by your staff	Not provided by LHD at all
Tobacco cessation treatment	27.60%	75.86%	22.41%
Nutrition counseling	18.97%	96.55%	5.17%
Physical activity counseling	24.14%	82.76%	17.24%
Pap smears	50.00%	87.93%	1.72%
Colposcopy	17.24%	31.03%	58.62%
Cancer screening (other than pap smears)	39.66%	62.07%	25.86%

Discussion

Cancer prevention activities are fairly common among NC LHDs and cancer screening is almost universal among NC LHDs. Comparing data from this survey of NC LHDs to the 2016 national NACCHO survey, rates of cancer screening may be higher in NC than the national average. Nationwide, 32% of LHD's perform cancer screening; while our survey reports 98.3% do so. The NACCHO survey does not include comparable questions on cancer prevention services. Tobacco cessation treatment, nutrition, and physical activity counseling are provided by 77.6%, 94.8%, and 82.8% of NC LHDs respectively. This highlights the need to provide current, evidence-based education and training for LHD medical directors and staff related to cancer prevention activities.

Data on the role and function of health departments and their medical directors from this survey can be used to better meet the healthcare needs by customizing educational opportunities in medical schools and residencies (5)(6). For example, since the majority of local health departments provide tobacco cessation treatment, nutrition counseling, physical activity counseling, pap smears, and cancer screening (other than pap smears), educational training programs should ensure these topics are covered in didactics and clinical rotations to ensure residents have the appropriate knowledge and skills to participate in these activities. A specific issue in one particular training program, Preventive Medicine, is that residents are only required to complete 40 days of individual patient care each year. If Preventive Medicine residencies claim to graduate physicians with skills suitable for LHD medical directors, then special attention in the curriculum should be given to clinical skills in cancer prevention and control.

This data can also be used to inform workforce development plans for health departments and ensure medical directors are well equipped to address current and emerging public health needs (5)(6). For example, each LHD can assess the training needs of the medical staff working in cancer prevention and control and provide additional training sessions in areas that need improvement.

A limitation of this survey is the response rate of 70.6%, which can introduce selection bias. There are many factors that may have contributed to a lack of response, including that the survey was initially e-mailed to everyone and some medical directors may not have checked their e-mails, or the e-mails may have gone to their spam folder, or they may not have been comfortable taking a survey on the computer/ To minimize this limitation, surveys were mailed out at the request of the provider. Another factor is that the survey was distributed through Qualtrics and used research team personal emails; the surveys may have been ignored since some medical directors may avoid opening emails from senders they do not know. Lastly, the \$20 gift card may have been too small for physicians to be used as an incentive.

A second limitation of this survey is that since we only surveyed North Carolina LHD medical directors, and it is known that LHDs vary significantly in roles and responsibilities across states. Our results may not be generalizable to LHDs outside of North Carolina. A final limitation is that nutrition and physical activity counseling services may have been overestimated by medical directors. For example, a medical director may have said that he or she provided physical activity counseling when he or she in reality only told the patient he or she should exercise during a primary care visit. Our

survey did not collect information related to the content or intensity of counseling services.

This study is the first survey of medical directors in North Carolina. It holds significant potential to help answer previously unaddressed questions about the role of LHD medical directors in cancer prevention and control as well as other services.

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Appendix A: NC Medical Director Initial E-mail invitation

SUBJECT LINE:

The role of physicians as NC local health department medical directors

Dear Dr. [LAST NAME],

We are writing to ask your help with a study of the role of physicians as North Carolina local health department medical directors. We are conducting an online survey of all NC local health department medical directors that will help us better understand the role of physicians as NC local health department medical directors. Your feedback will help improve the Family Medicine and Preventive Medicine Residency curriculum to better serve the needs of its graduates. We are especially interested in how medical directors feel their training prepared them for their current positions.

The link to the survey is below. It should only take about 15-20 minutes of your time.

[Survey link here]

We would appreciate your participation and thank you in advance for your assistance.

As a small token of thank you for your participation, you will receive a gift card of \$20.

Sincerely,

Emily Hanna, MD
PGY-3 Preventive Medicine
UNC at Chapel Hill
emily.hanna@unchealth.unc.edu
UNC Preventive Medicine Resident and Principal Investigator

Deborah Porterfield MD MPH
UNC Preventive Medicine Residency Program Director and Research Mentor

Appendix B: E-mail Reminder 1

SUBJECT LINE:

Engaged in Healthcare Transformation?

Dear Dr. [Last Name]

We recently sent you an email asking for your feedback on your role as a medical director of a North Carolina local health department.

The survey will only take a few moments of your time but will help to inform the Family Medicine and Preventive Medicine Residency curriculum to better serve the needs of its graduates.

As a small token of thank you for your participation, you will receive a gift card of \$20.

Follow this link to the Survey:

[\\${://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${://SurveyURL}](#)

If you have questions or comments, please contact Dr. Emily Hanna (contact information listed below). Thank you in advance for your assistance.

Sincerely,

Emily Hanna, MD
PGY-3 Preventive Medicine
UNC at Chapel Hill
emily.hanna@unchealth.unc.edu
UNC Preventive Medicine Resident and Principal Investigator

Deborah Porterfield MD MPH
UNC Preventive Medicine Residency Program Director and Research Mentor

Appendix C: E-mail Reminder 2

Subject Line: The role of physicians as NC local health department medical directors



Dear Dr. \${m://LastName}

I am a second year preventive medicine resident at the University of North Carolina School reaching out to ask for your help with an important study I am conducting to better understand North Carolina physicians as medical directors of local health departments.

I am writing you personally because our research goal to understand the your perspective of health department medical directors, depends on hearing from you.

Kindly follow the link below and complete the questionnaire. **It takes less than 20 minutes of your time**, and the response of every Program Director is crucial.

Follow this link to the Survey:

[\\${!://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${!://SurveyURL}](#)

Once your questionnaire is completed, your name will be removed from our list, and you will not be contacted again.

Thank you so much for taking the time to complete the survey.

As a small token of thank you for your participation, you will receive a gift card of \$20.

Kind regards,

Emily Hanna, M.D.
Research Investigator
PGY-3 Preventive Medicine
UNC at Chapel Hill
emily.hanna@unchealth.unc.edu

Best,
Emily

Appendix D: E-mail Reminder 3

Subject Line: The role of physicians as NC local health department medical directors



Dear Dr. \${m://LastName}

I am a second year preventive medicine resident at the University of North Carolina School reaching out to ask for your help with an important study I am conducting to better understand North Carolina physicians as medical directors of local health departments.

I am writing you personally because our research goal to understand the your perspective of health department medical directors, depends on hearing from you.

Kindly follow the link below and complete the questionnaire. **It takes less than 20 minutes of your time**, and the response of every Program Director is crucial.

Follow this link to the Survey:

[\\${l://SurveyLink?d=Take the Survey}](#)

Or copy and paste the URL below into your internet browser:

[\\${l://SurveyURL}](#)

Once your questionnaire is completed, your name will be removed from our list, and you will not be contacted again.

Thank you so much for taking the time to complete the survey.

As a small token of thank you for your participation, you will receive a gift card of \$20.

Kind regards,

Emily Hanna, M.D.
Research Investigator
PGY-3 Preventive Medicine
UNC at Chapel Hill
emily.hanna@unchealth.unc.edu

Best,
Emily

Appendix E: NC Local Health Department (LHD) Medical Director Survey

Medical Director Survey

Start of Block: Default Question Block

Q59 You are invited to participate in this research project because you are a medical director at a North Carolina local health department. The purpose of this research project is to investigate the role of physicians as NC local health department medical directors. This is a research project being conducted by Preventive and Family Medicine Departments at University of North Carolina. Your participation in this research study is voluntary. You may choose not to participate. If you decide to participate in this research survey, you may withdraw at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized. The procedure involves filling an online survey that will take approximately 15 minutes. Your responses will be confidential and we do not collect any additional identifying information. The survey questions will be about your training, role, and services you provide. We will do our best to keep your information confidential. All data is stored in a password protected electronic format. The results of this study will be used for scholarly purposes only. You will receive a gift card of \$20 as a thank you for your participation. By selecting "I consent", I agree to participate in this survey.

I consent (1)

Q1 What is the name of the health department where you work?

Q2 Are you the medical director of the health department listed in question 1?

Yes (1)

No (2)

Display This Question:

If Are you the medical director of the health department listed in question 1? = No

Q3 What is the name and email address of the medical director at the health department where you work?

Skip To: End of Survey If What is the name and email address of the medical director at the health department where you wor... =

Page Break

End of Block: Default Question Block

Start of Block: General comments for challenges and opportunities as medial director

Q5 Please describe one of the biggest challenges in your position as medical director

Q6 Please describe one of the biggest opportunities in your position

Q7 Please describe one of your biggest successes as Medical Director, whether accomplished by you individually or as a health department as a whole

Q8 Please list at least 1 piece of advice for physicians new to the health department medical director role

End of Block: General comments for challenges and opportunities as medial director

Start of Block: The next set of questions are about work hours

Q9 Are you hired by the health department as full time or part time?

Full time (1)

Part time (2)

Display This Question:

If Are you hired by the health department as full time or part time? = Part time



Q10 What percent time (% full time equivalent or FTE) are you hired by the health department?

Page Break

Q53 Are you employed directly by the county/district health department or subcontracted?

Directly (1)

Subcontracted (2)

Display This Question:

If Are you employed directly by the county/district health department or subcontracted? = Subcontracted

Q11 By whom are you subcontracted?

Page Break

Q12 Do you have a paid role outside of the health department?

Yes (1)

No (2)

Display This Question:

If Do you have a paid role outside of the health department? = Yes

Q13 What describes your paid role(s) outside of the health department?

Private practice (1)

Academic (teaching/research) role (2)

Other; please specify (3)

Page Break

Display This Question:

If What describes your paid role(s) outside of the health department? = Other; please specify

Q58 Please specify "other" paid role (s) outside of the health department

Skip To: Q14 If Please specify "other" paid role (s) outside of the health department =

Page Break

Display This Question:

If What describes your paid role(s) outside of the health department? = Private practice

*

Q14 What %FTE is private practice?

Page Break

Display This Question:

If What describes your paid role(s) outside of the health department? = Academic (teaching/research) role

*

Q15 What %FTE is academic (teaching/research) role?

Page Break

Display This Question:

If What describes your paid role(s) outside of the health department? = Other; please specify

*

Q16 What %FTE is "other"?

Page Break



Q17 Thinking about the time that you spend working as health department medical director, approximately how is it allocated in a typical week? Please list the approximate percent spent in each activity (Note: totals should add up to 100%)

% Clinic administration– administrative tasks i.e. developing/reviewing protocols, attending meetings : _____ (1)

% Staff supervision – serving as a resource and supervisor for other providers (e.g. nurse practitioners), including conducting chart reviews : _____ (2)

% Direct patient care – seeing patients, following up lab/study results, chart completion : _____ (3)

% Medical consultation for other health department activities (policy development, program planning and evaluation) : _____ (4)

% Community and stakeholder engagement – community outreach events, lectures, meetings with other county officials : _____ (5)

% Other : _____ (6)

Total : _____

Display This Question:

If Thinking about the time that you spend working as health department medical director, approximat... [% Other] != 0

Q18 Describe "other" activity of your time spent working as health department medical director

Page Break

End of Block: The next set of questions are about work hours

Start of Block: Questions provided by the LHD and your role in the health department

Q19 Are you the supervisor for all personnel providing clinical services (including nurse practitioners, physician assistants, nurses, nutritionists) at your Local Health Department (LHD)?

Yes (1)

No (2)

Q20 Which of the services below are provided by your health department, and by whom?

	Provided by yourself directly (1)	Provided by your staff (2)	Not provided by LHD at all (3)
Adult primary care (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pediatric primary care (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tobacco cessation treatment (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nutrition counseling (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physical activity counseling (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pap smears (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Colposcopy (7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opioid addiction treatment (8)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prenatal care (9)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cancer screening (other than pap smears) (10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contraception prescription/procedures (11)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contraception counseling (12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q21 Please indicate whether you have a role in each of the following

	Not at all involved (1)	Somewhat involved (2)	Often involved (3)
Disease surveillance (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chronic disease programs (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outbreak investigation (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health communication (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Policy development (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q22 Are there services that are not currently offered by the health department that you would like to see offered?

Yes (1)

No (2)

Display This Question:

If Are there services that are not currently offered by the health department that you would like t... = Yes

Q23 Please explain what services are not currently offered by the health department that you would like to see offered

Page Break

Q24 Are you satisfied with your compensation?

Yes (1)

No (2)

Q25 Do you work well with the local board of health?

Yes (1)

No (2)

Q26 Do you work well with the health director at your health department?

Yes (1)

No (2)

Q27 Do you feel that you have competing interest(s) with the local board of health?

Yes (1)

No (2)

Q28 Do you feel that you have competing interest(s) with the health director at your health department?

Yes (1)

No (2)

End of Block: Questions provided by the LHD and your role in the health department

Start of Block: The next set of questions ask about competencies necessary for the role of medic

Q29 As LHD (Local Health Department) medical director, do you have a role in the relationship between the LHD and other medical clinics in the community?

Yes (1)

No (2)

Display This Question:

If As LHD (Local Health Department) medical director, do you have a role in the relationship between... = Yes

Q30 Please briefly explain your role in the relationship between the LHD and other medical clinics in the community

Page Break

Q31 As LHD medical director, do you have a role in the relationship between the LHD and providers of social services in the community?

Yes (1)

No (2)

Display This Question:

If As LHD medical director, do you have a role in the relationship between the LHD and providers of... = Yes

Q32 Please briefly explain your role in the relationship between the LHD and providers of social services in the community

Page Break

Q33 Please check all that apply to your training

	Attended (1)	Completed (2)	Ever Board Certified (3)	Currently Board Certified (4)
Family Medicine Residency (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal Medicine Residency (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pediatrics Residency (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OB/GYN Residency (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preventive Medicine Residency (5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other residency (6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Display This Question:

If Please check all that apply to your training [Other residency] (Recode) Is Not Empty

Q34 Specify "other" training you have had from the previous question

Page Break

Q35 Have you ever served in the military?

Yes (1)

No (2)

Q36 Do you have an MPH?

Yes (1)

No (2)

Display This Question:

If Do you have an MPH? = Yes

*

Q37 Year MPH obtained

Page Break

Q38 Do you have an MBA?

Yes (1)

No (2)

Display This Question:

If Do you have an MBA? = Yes

*

Q39 Year MBA obtained

Page Break

Q40 Do you have any other advanced degrees (for example JD, DrPH, or PhD)?

Yes (1)

No (2)

Display This Question:

*If Do you have any other advanced degrees (for example JD, DrPH, or PhD)? =
Yes*

Q41 What other advanced degree (s) do you have?

Page Break

Q42 Do you have formal Quality improvement (QI) training?

Yes (1)

No (2)

Display This Question:

If Do you have formal Quality improvement (QI) training? = Yes

*

Q43 Year QI training obtained

Page Break

Display This Question:

If Do you have formal Quality improvement (QI) training? = Yes

Q44 Please explain the formal QI training you obtained

Page Break

Q45 How long have you been in this medical director position?

- Less than 1 year (1)
 - 1 to less than 5 years (2)
 - 5 to less than 10 years (3)
 - Over 10 years (4)
-

Q46 What experience did you have before you took this position as medical director?
Check all that apply

- Previous health department medical director (1)
 - National Health Service corps (2)
 - Public Health Service (3)
 - Physician military service (4)
 - Community Health Center (5)
 - Private practice (6)
 - Academic medicine (7)
 - Hospital based practice (8)
 - Volunteer free clinic (9)
 - Other (10)
-

Display This Question:

*If What experience did you have before you took this position as medical director?
Check all that a... = Other*

Q47 Please explain any "other" experience you had before you took this position as medical director

Page Break

Q48 To the best of your knowledge, please provide estimates of the percent of LHD patients that

- _____ % Speak Spanish (1)
 - _____ % Come for chronic disease care (2)
 - _____ % Come for prenatal care (3)
 - _____ % Come for STD care (4)
-



Q49 How old are you?

Q50 Are you male or female?

- Male (1)
 - Female (2)
-

Q51 What is your race/ethnicity?

- American Indian or Alaska Native (1)
- Asian (2)
- Black or African American (3)
- Hispanic or Latino (4)
- Native Hawaiian or Other Pacific Islander (5)
- White (6)

End of Block: The next set of questions ask about competencies necessary for the role of medical director role

Start of Block: Last set of questions are about necessary competencies for medical director role

Q52 The following table includes current Family Medicine and Preventive Medicine competencies. Please check how important you feel they are for your role as LHD medical director

	Very important (1)	Somewhat important (2)	Not important (3)
Cares for acutely ill or Injured patients in urgent and emergent situations and in all settings (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cares for patients with chronic conditions (2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partners with the patient, family, and community to Improve health through disease prevention and health promotion (3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Partners with the patient to address issues of ongoing signs, symptoms, or health concerns that remain over time without clear diagnosis despite evaluation and treatment, in a patient-centered, cost-effective manner (4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Performs specialty-appropriate procedures to meet the health care needs of Individual patients, families, and communities, and Is knowledgeable about procedures performed by other specialists to guide their patients' care (5)

Demonstrates MK (medical knowledge) of sufficient breadth and depth to practice family medicine (6)

Applies critical thinking skills in patient care (7)

Provides cost-conscious medical care (8)

Emphasizes patient safety (9)

Is an advocate for individual and community health (10)

Coordinates team-based care (11)

Locates, appraises, and assimilates evidence from scientific studies related to the patients' health problems (12)

Demonstrates self-directed learning (13)

Improves systems in which the physician provides care (14)

Completes the process of professionalization (15)

Demonstrates professional conduct and accountability (16)

Demonstrates humanism and cultural proficiency (17)

Maintains emotional, physical, and mental health, and pursues continual personal and professional growth (18)

Develops meaningful, therapeutic relationships with patients and families (19)

Communicates effectively with patients, families, and the public (20)

Develops relationships and effectively communicates with physicians, other health professionals, and health care teams (21)

Uses technology to optimize communication (22)

Apply skills in Emergency Preparedness and Response (23)

Monitor, diagnose, and investigate community health problems. (24)

Inform and educate populations about health threats and risks (25)

Develop policies and plans to support individual and community health efforts (26)

Evaluate Population-based health services (27)

Characterize the health of a community (28)

Design and conduct an epidemiologic study (29)

Investigate and respond to a cluster or outbreak (30)

Design and operate a surveillance system (31)

Analyze evidence regarding the performance of proposed clinical preventive services for individuals and populations (32)

Implement appropriate clinical care for individuals with conditions of public health significance (33)

Select and provide appropriate evidence-based clinical preventive services (34)

Develops and evaluates programs to change health behaviors of individuals (35)

Recommends, interprets, and explains the results of individual environmental monitoring (36)

Interprets and explains population level environmental monitoring results (37)

Independently analyzes large data sets using complex statistical methods (38)

Work and coordinate patient care effectively in various health care delivery settings and systems (39)

Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population based care as appropriate. (40)

Work in inter-professional teams to enhance patient safety and improve patient care quality; advocate for quality patient care and optimal patient care systems; participate in identifying system errors and implementing potential systems solutions (41)

Identify strengths, deficiencies, and limits in one's knowledge and expertise; Set learning and improvement goals and identify and perform appropriate learning activities utilizing information technology, evidence from scientific studies and evaluation feedback; Systematically analyze practice using quality improvement methods and implement changes with the goal of practice improvement. (42)



Compassion, integrity, and respect for others as well as sensitivity and responsiveness to diverse patient populations including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation (43)



Knowledge about, respect for and adherence to the ethical principles relevant to the practice of medicine, remembering in particular that responsiveness to patients that supersedes self-interest is an essential aspect of medical practice (44)

Accountability to patients, society and the profession (45)

Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; communicate effectively with physicians, other health care professionals and health related agencies. Work effectively as a member or leader of a healthcare team or other professional group; act in a consultative role to other physicians and health professionals (46)

Maintain comprehensive, timely and legible medical records, including electronic health records (47)

End of Block: Last set of questions are about necessary competencies for medical director role

Appendix F: Public Health Workforce Training Needs Literature Review

Introduction

The public health workforce is the most important component of public health (7). To make sure the public health workforce has the necessary skills to meet population health needs, public health leaders have called for better data on the public health workforce (2). Existing literature on the training and education needs of the public health workforce indicate the biggest need gaps are in managerial, leadership, and policy development skills (8). However, these training needs have not had clear prioritization in the literature. It is crucial to examine and prioritize the training needs of the public health workforce in order to ensure vibrant population health now and in the future. This systematic review aims to identify and synthesize literature reporting on training needs of the public health workforce, specifically those of local health department employees.

Methods

A search was conducted to find literature examining the training needs of local health department employees with the assistance of a medical, academic, and research engagement librarian using the following databases: MEDLINE/PubMed, ProQuest Health Management Database, and Business source premier. The search terms included MeSH and ProQuest terms with key terms related to health department and employee training. All searches were conducted on December 11, 2018 and search strategies can be found in Figure A-1.

Regarding study selection, full eligibility criteria are described in Table A-1. Cross-sectional or cohort studies, including surveys were eligible for inclusion. Studies had to be relevant to local health departments and only studies that were published within the last ten years were included. Limiting to the past ten years helps ensure that results are relevant to current practice.

All titles and abstracts were initially screened by inclusion criteria by a single reviewer. Those that were potentially relevant underwent full-text review for eligibility. For each included study, one investigator extracted information related to populations, outcomes, setting, and study design. The quality of studies was rated using Critical Appraisal of Qualitative Research Checklist. A modified list of questions and assessment are shown in Appendix A, Table A-2.

Results

Search Results

A total of 1089 records were retrieved from all databases. After removal of duplicates, 935 unique citations underwent initial title and abstract screening. Of these, 931 records were excluded and four met full eligibility criteria for inclusion. Figure A-2 shows the article flow diagram summarizing the literature selection process and reasons for exclusion.

Study Characteristics

All four studies were cross-sectional surveys of local health departments (5,6,8,9). The surveys response rates varied from 27.1%-57%. Two studies surveyed multiple states (all states except Florida, Alabama, Kentucky, West Virginia, New Hampshire, Maine, New Mexico, Colorado, Nevada, Oregon, Idaho, Montana, and Hawaii in one study(8) and the other study did not specify which states but did specify that they surveyed 26 of the 28 Big Cities Health Coalitions (BCHC) health departments; currently, there are 29 BCHC health departments and they are in Texas, Maryland, Massachusetts, North Carolina, Illinois, Ohio, Colorado, Michigan, Missouri, Nevada, California, Florida, Minnesota, New York, Pennsylvania, Arizona, Oregon, Washington, and DC in the other study (6)) one was limited to one state (Nebraska)(5) and the other was limited to a single health department in New York state(9). Three surveys were newly designed and one was built on a previously conducted survey; none of the surveys solely relied on previously validated survey instruments, but one did seek to incorporate validated measures when it was possible.

All studies were specifically targeting local health department workforce. They selected their participants through asking health directors or another lead health official to forward the survey to employees via employee lists provided by states, Human Resource help, and self-reported information from Employee Data Bank. The purposes of the surveys range from determining the competency levels of the state's public health workforce, assessing gaps in public health competencies, identifying public health training interests, needs, and preferences, and determining the barriers and motivators to participate in public health training(5), to identifying essential knowledge, skills, and abilities (KSAs) for and characterize gaps in KSAs of professionals working in large,

urban health departments (6), Characterizing key components of the public health workforce, including demographics, workplace environment, perceptions about national trends, and perceived training needs (8), and identifying key competencies and skills that all master of public health graduates should have to be prepared to work in a local health department(9). Two surveys directly surveyed public health professionals about training needs, while one surveyed supervisors, and one surveyed both employees and supervisors about the training needs of employees.

Study Quality

The assessment of quality was conducted using the Critical Appraisal of Qualitative Research Checklist (Table A-2). All studies had a clear statement of aims, and sufficiently rigorous data analysis. Three of the four studies had a clear appropriate recruitment strategy, while all studies adequately considered the relationship between the researcher and the participants. One study(6) had a lower response rates compared with the others (27.1%) and is limited due to potential selection bias.

Results

Three of the four studies found a training need in policy understanding or development (5,6,8) . Two studies found training needs in financial planning, analytical and management skills (5,9). The first study found that public health professionals perceived they were least proficient in the area of policy development and program planning but identified the greatest needs for training as financial planning and management skills and analytical/assessment skills(5). Another study found the

greatest training needs include influencing policy development, preparing a budget, and training related to the social determinants of health(8). The third study found that the top skill gaps perceived by supervisors were staffs' ability to apply quality improvement concepts to their work, understanding of the political system, and ability to anticipate change(6). The last study found that the skills for which MPH graduates most often were underprepared for included skills in using SAS statistical software, quantitative data analysis/statistics, personnel management/leadership, and data collection/database management/data cleaning. Among hiring managers, they thought MPH graduates were inadequately prepared in quantitative data analysis, researching/conducting literature reviews, scientific writing and publication, management skills, and working with contracts/requests for proposals(9).

Discussion

Overall, the literature base examining the training needs of local health department employees is small and heterogeneous. However, the results of this review reveal important findings that may help inform future work in this area. First, there continues to be a lack of research related to local health department employees, especially from national samples. This could reflect a lack of resources among local health departments which limits the ability to collect data. One limitation of two of the four studies is that they only give the perspective of the employees about their own training need(5,8). Two of the four studies have limited generalizability as the surveys only include one health department or one state's local health departments(5,9). Another limitation of one study is the low response rate of 27.1%(6).

These limitations are important to consider in the future design and evaluation of training needs of local health departments in order to increase generalizability of the surveys. For example, future surveys could...increase their response rate by adding financial incentive and can also include more health departments from a nationally representative sample in their surveys in order to increase the generalizability of the study. Despite the limitations of the evidence, the results of this review are promising; even though studies were heterogeneous they consistently found that policy training is needed among local health department workers, which is consistent with training needs of the public health workforce found from other surveys.

Table A-1: Study Inclusion and Exclusion Criteria

	Included	Excluded
Population	Current employees of local health departments including medical directors	Employees in other clinical/healthcare settings
Outcomes	Training needs assessments	All other outcomes
Countries	Studies conducted in the United States; settings relevant to local health departments	Studies conducted in other settings
Study designs	Cross-sectional, including surveys	All other designs
Timing	Studies conducted since 2008	Studies conducted before 2008

Figure A-1: MEDLINE, ProQuest Health Management Database, and Business source premier

Database: PubMed (MEDLINE) Search Date: 12/11/18

Set #		Results
1	(((((State-Government[Mesh] OR State-Government[tiab] OR Local-Government[Mesh] OR Local-Government[tiab] OR County-Health-Department[tiab] OR County-Health-Departments[tiab] OR Local-Health-Department[tiab] OR Local-Health-Deparmtent[tiab] OR Rural-Health-Department[tiab] OR Rural-Health-Departments[tiab] OR Urban-Health-Department[tiab] OR Urban-Health-Departments[tiab] OR Health-Department[tiab] OR Health-Departments[tiab])))	7608

2	((Surveys-and-Questionnaires[Mesh] OR Questionnaires[tiab] OR Questionnaire[tiab] OR Surveys[tiab] OR Survey[tiab] OR Public-Health-Workforce-Interests-and-Needs-Survey[tiab] OR PH-WINS[tiab] OR Needs-Assessment[Mesh] OR Needs-Assessment[tw] OR Needs-Assessments[tw]))	759735
3	((Professional-Competence[Mesh] OR Professional-Competence[tiab] OR Knowledge[tiab] OR Skills[tiab] OR Ability[tiab] OR Abilities[tiab] OR Competency[tiab] OR Competencies[tiab] OR Training-Needs[tiab] OR employee-skills[tiab] OR employee-skill[tiab] OR employee-training[tiab] OR employee-competency[tiab] OR employee-competencies[tiab] OR employee-knowledge[tiab] OR staff-skills[tiab] OR staff-skill[tiab] OR staff-competency[tiab] OR staff-competencies[tiab] OR staff-training[tiab] OR staff-knowledge[tiab] OR KSA[tiab] OR KSAs[tiab] OR Information-Seeking-Behavior[Mesh] OR Information-Seeking-Behavior[tiab] OR Information Gathering[tiab] OR Gathering Information[tiab] OR Communication[Mesh] OR Oral Communication[tiab] OR Verbal Communication[tiab] OR Written Communication[tiab] OR Cultural Competency[Mesh] OR Cultural Competent[tiab] OR Cultural Competence[tiab]))	984060
4	#1 and #2 and #3	452

Database: ProQuest Health Management Search Date: 12/11/18

Set #		Results
1	ti(health-department) OR ti(health-departments) OR ab(health-department) OR ab(health-departments)	595
2	(Professional-Competence OR Knowledge OR Skills OR Ability OR Abilities OR Competency OR Competencies OR Training-Needs OR employee-skills OR employee-skill OR employee-training OR employee-competency OR employee-competencies OR employee-knowledge OR staff-skills OR staff-skill OR staff-competency OR staff-competencies OR staff-training OR staff-knowledge OR KSA OR KSAs)	176944
3	#1 and #2	466

Database: Business Source Premier Search Date: 12/11/18

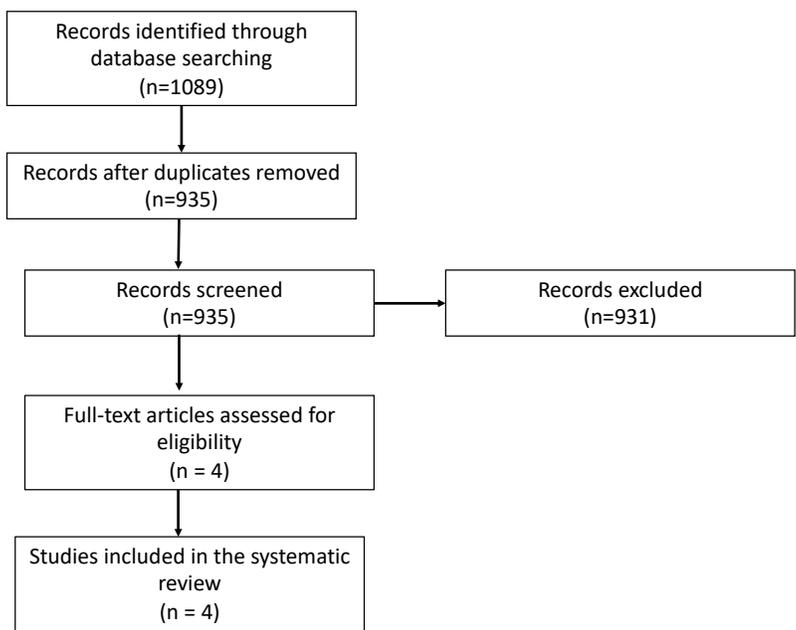
Set #		Results
1	TI (health-department OR health-departments) OR AB (health-departments OR health-department)	284
2	TX ((Professional-Competence OR Knowledge OR Skills OR Ability OR Abilities OR Competency OR Competencies OR Training-Needs OR employee-skills OR employee-skill OR employee-training OR employee-competency OR employee-	364218

	competencies OR employee-knowledge OR staff-skills OR staff-skill OR staff-competency OR staff-competencies OR staff-training OR staff-knowledge OR KSA OR KSAs))	
3	#1 and #2	171

Table A-2: Study Characteristics & Results

Study	Clear statement of the aims?	Appropriate recruitment strategy?	Has the relationship between the researcher and participants been adequately considered?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?
Grimm et. al (2011)(5)	Yes	Can't Tell	Yes	Yes	Yes	Very
Sellers et. al (2015)(8)	Yes	Yes	Yes	Yes	Yes	Very
McGinty et. al (2018)(6)	Yes	Yes	Yes	Yes	Yes	Not very
Hemans-Henry et. al (2016)(9)	Yes	Yes	Yes	Yes	Yes	Very

Figure A-2: Systematic Review Flow Diagram



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