2016

Clinical Service Delivery along the Urban/Rural Continuum

Kate E. Beatty
East Tennessee State University, beattyk@etsu.edu

Nathan Hale
East Tennessee State University, halenl@etsu.edu

Michael Meit

Paula Masters
East Tennessee State University, mastersp@etsu.edu

Amal Khoury
East Tennessee State University, khoury@etsu.edu

Citation Information

Beatty, Kate E.; Hale, Nathan; Meit, Michael; Masters, Paula; and Khoury, Amal. 2016. Clinical Service Delivery along the Urban/Rural Continuum. *Frontiers in Public Health Services and Systems Research*. Vol.5(1). 21-27. https://doi.org/10.13023/FPHSSR.0501.04 ISSN: 2169-1584

Clinical Service Delivery along the Urban/Rural Continuum

Comments

Frontiers in Public Health Services and Systems Research

Volume 5 | Number 1 Article 4

February 2016

Local Health Department Clinical Service Delivery along the Urban/Rural Continuum

Kate E. Beatty
East Tennessee State University, beattyk@etsu.edu

Nathan Hale
East Tennessee State University, HALENL@mail.etsu.edu

Michael Meit
meit-michael@norc.org

Paula Masters
East Tennessee State University, MASTERSP@mail.etsu.edu

Amal Khoury
East Tennessee State University, KHOURY@mail.etsu.edu

Recommended Citation

Beatty KE, Hale N, Meit M, Masters P, Khoury A. Local health department clinical service delivery along the urban–rural continuum. Front Public Health Serv Sys Res 2016;5(1):21-27. DOI: 10.13023/FPHSSR.0501.04.

Local Health Department Clinical Service Delivery along the Urban/Rural Continuum

Abstract

Background: Engagement in the core public health functions and ten essential services remains the standard for measuring local health department (LHD) performance; their role as providers of clinical services remains uncertain, particularly in rural and underserved communities.

Purpose: To examine the role of LHDs as clinical service providers and how this role varies among rural and nonrural communities.

Methods: The 2013 National Association of County and City Health Officials (NACCHO) Profile was used to examine the geographic distribution of clinical service provision among LHDs. LHDs were coded as *urban*, *large rural*, or *small rural* based on Rural/Urban Commuting Area codes. Bivariate analysis for clinical services was conducted by rural/urban status. For each service, the proportions of LHDs that directly performed the service, contracted with other organizations to provide the service, or reported provision of the service by independent organizations in the community was compared.

Results: Analyses show significant differences in patterns of clinical services offered, contracted, or provided by others, based on rurality. LHDs serving rural communities, especially large rural LHDs, tend to provide more direct services than urban LHDs. Among rural LHDs, larger rural LHDs provided a broader array of services and reported more community capacity for delivery than small rural LHDs- particularly maternal and child health services.

Implications: There are capacity differences between large and small rural LHDs. Limited capacity within small rural LHDs may result in providing less services, regardless of the availability of other providers within their communities. These findings provide valuable information on clinical service provision among LHDs, particularly in rural and underserved communities.

Keywords

clinical services, local health departments, rural

Cover Page Footnote

No competing financial or editorial interests were reported by the authors of this paper.

INTRODUCTION

As the national health policy environment continues to shift, the orientation of local public health services within the larger health system remains a salient issue. The release of two important Institute of Medicine (IOM) reports reflect a shift in focus towards population-based public health services.[1,2] Although engagement in the core public health functions and ten essential services remains the standard for measuring local health department (LHD) performance, their role as a provider of clinical services remains uncertain, particularly in rural and underserved communities.

Presumably, the collective impact of health systems reform coupled with decreases in the number of uninsured may lessen the demand for clinical services provided by LHDs. However, many LHDs operating in rural and historically underserved communities remain an integral part of a fragile safety net. With a limited primary care infrastructure, it is unlikely that the demand for clinical services provided by LHDs will subside in states that did not expand Medicaid. This may also be the case in Medicaid expansion states, where expanded insurance coverage may exacerbate existing provider and service shortages as more individuals join the insured population.

As the focus on population health and healthcare systems reform continues, there is a need to better understand the current role of LHDs as clinical service providers and the extent this role may vary among rural and nonrural communities. In this study, clinical services delivery was examined among LHDs by level of rurality.

METHODS

Data Source and Variable of Interest. The 2013 National Profile of Local Health Departments data from the National Association of County and City Health Officials (NACCHO) was used to examine the geographic distribution of clinical service provision among LHDs.[3] The ZIP codes of the LHDs were used to identify corresponding Rural Urban Commuting Areas (RUCA) codes, which served as the measure of rurality.[4] The LHD addresses are likely to be located within the most populous area of the LHD jurisdiction, which may underestimate rurality.

The provision of clinical services among LHDs served as the primary variable of interest. Clinical services included immunizations, screenings, treatment for communicable diseases, maternal and child health, and other services (Table 1). The LHDs' response indicating whether or not the service was (1) performed by the LHD directly, (2) contracted out by the LHD, or (3) provided by others in the community independent of LHD funding was used to examine the distribution of clinical services within a given jurisdiction. The LHDs' response to each of the three variables was coded as a dichotomous (*yes/no*) variable.

A categorical variable reflecting three levels of rurality was constructed using RUCA codes. *Urban* included census tracts with towns with populations >50,000. *Large rural* included census tracts with towns of between 10,000 and 49,999 population and census tracts tied to these towns through commuting. *Small rural* included census tracts with small towns of <10,000 population, tracts tied to small towns, and isolated census tracts. Approximately 41% (*n*=1002) of LHDs are categorized as urban, 21% (*n*=516) large rural, and 38% (*n*=939) small rural.

Table 1. Clinical service provision by rurality

	Performed by LHD directly			Provided by others in community			Contracted by LHD		
	Urban	Large Rural	Small Rural	Urban	Large Rural	Small Rural	Urban	Large Rural	Small Rural
Service	*n*(%)	*n*(%)	*n*(%)	*n*(%)	*n*(%)	*n*(%)	*n*(%)	*n*(%)	*n*(%)
Immunizations									
Adult	778 (84.5)	492 (96.1)	922 (93.0)***	511 (55.5)	263 (51.5)	496 (50.1)	58 (6.3)	7 (1.4)	5 (0.5)***
Childhood	739 (80.2)	493 (96.3)	912 (93.3)***	544 (59.1)	269 (52.6)	443 (45.4)***	66 (7.2)	0 (0)	12 (1.2)***
Screenings									
HIV/AIDS	552 (60.9)	358(69.4)	535 (54.4)***	635 (70.1)	306 (59.3)	538 (54.7)***	91 (10.0)	25 (4.8)	40 (4.1)***
Other STDs	527 (57.6)	377 (73.1)	601 (62.0)***	593 (64.9)	291 (56.4)	563 (58.1)***	86 (9.4)	14 (2.7)	36 (3.7)***
Tuberculosis	717 (77.1)	461 (89.3)	842 (87.5)***	480 (51.6)	222 (53.0)	367 (38.1)***	61 (6.6)	6 (1.2)	15 (1.9)***
Cancer	282 (31.3)	228 (45.6)	324 (33.7)***	775 (85.9)	398 (79.6)	756 (78.6)***	45 (5.0)	22 (4.4)	13 (1.4)***
Cardiovascular disease	226 (25.4)	157 (31.8)	255 (27.1)*	731 (82.1)	436 (88.3)	765 (81.1)**	30 (3.4)	0 (0)	13 (1.4)***
Diabetes	299 (33.1)	182 (35.6)	294 (31.2)	706 (78.1)	415 (81.2)	759 (80.6)	39 (4.3)	0 (0)	7 (0.7)***
High blood pressure	454 (49.3)	309 (59.9)	601 (61.9)***	641 (69.6)	371 (71.8)	632 (65.1)*	51 (5.5)	7 (1.4)	14 (1.4)***
Blood lead	475 (52.7)	344 (67.9)	585 (62.0)***	582 (64.5)	316 (62.5)	485 (51.5)***	59 (6.5)	11 (2.2)	12 (1.3)***
TX Communicable Diseases									
HIV/AIDS	228 (24.9)	124 (24.6)	207 (21.3)	733 (80.2)	394 (78.0)	582 (59.9)***	73 (8.0)	19 (3.8)	76 (7.8)**
Other STDs	500 (54.5)	354 (68.6)	560 (57.4)***	667 (72.7)	332 (64.3)	569 (58.3)***	84 (9.2)	8 (1.6)	43 (4.4)***
Tuberculosis	618 (67.2)	455 (88.2)	777 (79.0)***	526 (57.2)	222 (43.0)	342 (34.8)***	54 (5.9)	12 (2.3)	43 (4.4)**
Maternal & Child Health									
Family planning	341 (38.1)	364 (70.5)	572 (57.7)***	689 (77.0)	338 (65.5)	589 (59.4)***	46 (5.1)	24 (4.7)	65 (6.6)
Prenatal care	246 (27.2)	142 (27.5)	250 (25.6)	741 (82.1)	450 (87.2)	662 (67.8)***	47 (5.2)	22 (4.3)	28 (2.9)*
Obstetrical care	86 (9.6)	50 (9.7)	27 (2.9)***	775 (86.3)	489 (94.8)	643 (68.1)***	49 (5.5)	28 (5.4)	48 (5.1)
WIC	492 (54.6)	371 (72.7)	663 (68.4)***	366 (40.6)	173 (33.9)	284 (29.3)***	40 (4.4)	10 (2.0)	55 (5.7)**
MCH home visits	499 (55.4)	373 (72.3)	596 (61.5)***	391 (43.3)	159 (30.8)	229 (23.6)***	35 (3.9)	9 (1.7)	14 (1.4)**
EPSDT	191 (21.5)	220 (43.1)	386 (40.3)***	555 (62.6)	321 (62.8)	439 (45.8)***	29 (3.3)	0 (0)	36 (3.8)***
Well child clinic	276 (30.6)	140 (27.1)	317 (30.9)	613 (68.1)	395 (76.6)	655 (68.5)***	59 (6.6)	0 (0)	21 (2.2)***
Other Health Services									
Comprehensive primary care	87 (9.7)	72 (14.0)	73 (7.5)***	804 (89.2)	469 (90.7)	910 (93.0)*	23 (2.3)	0 (0)	0 (0)***
Home health care	94 (10.3)	111 (21.8)	279 (28.3)***	806 (88.5)	470 (92.2)	733 (74.3)***	41 (4.5)	11 (2.2)	18 (1.8)**
Oral health	290 (32.1)	119 (23.30	172 (17.6)***	765 (84.6)	451 (88.3)	825 (84.4)	50 (5.5)	22 (4.3)	20 (2.0)***
Behavioral/mental health services	95 (10.5)	67 (13.3)	83 (8.5)*	820 (90.5)	478 (94.7)	863 (88.2)***	62 (6.8)	13 (2.6)	7 (0.7)***
Substance abuse services	83 (9.2)	42 (8.2)	38 (3.9)***	815 (90.1)	493 (96.7)	832 (85.0)***	49 (5.4)	0 (0)	28 (2.9)***

*p<0.05, **p<0.01, ***p<0.00

Analysis. Bivariate analysis for 25 clinical services was conducted by rural/urban status of the LHD jurisdiction. For each service, we compared the proportions of small rural, large rural and urban LHDs that: (1) directly performed the service, (2) contracted with other organizations to provide the service, or (3) reported that the service was provided independent of the LHD by organizations in the community.

RESULTS

Services Performed by LHD Directly. For the categories of immunizations, screenings, treatment of communicable diseases, and maternal and child health, rural LHDs were generally more likely to provide direct services than urban LHDs. A few exceptions included HIV/AIDS screenings and obstetrical care, where urban LHDs were more likely to perform these services than rural LHDs. The category of *Other health services* did not follow as clear a pattern. Comprehensive primary care was provided most often by large rural LHDs (14.0%) followed by urban (9.7%) and small rural (7.5%) LHDs ($p<0.001$). Consistently, more large rural LHDs provided behavioral and mental health services than their urban and small rural counterparts. Home health care was provided most often by small rural LHDs (28.3%) followed by large rural (21.8%) and urban (10.3%) LHDs ($p<0.001$). Urban LHDs provided more oral health and substance abuse services than large and small rural LHDs. Overall, only a small proportion of all LHDs directly provided other health services (Table 1).

Services Provided by Others in the Community. For childhood immunizations, urban LHDs were most likely to report other providers within their community (59.1%), followed by large rural (52.6%) and small rural LHDs (45.4%), ($p<0.001$). The pattern was similar for treatment of communicable diseases, where urban LHDs were more likely to report other providers. Small rural LHDs were also less likely than other LHDs to report other community providers of screening services and MCH services. Other than family planning services and WIC, for which more urban LHDs reported other providers, large rural LHDs reported the most other service providers in their community. For all other health services, more large rural LHDs than their counterparts reported community providers of these services.

Services Contracted by LHD. Across all services, only a small percentage of LHDs contracted with other providers to provide services for the LHD. Except for WIC and EPSDT services, urban LHDs were overall more likely to contract with other providers to assure service provision compared to rural LHDs. For WIC and EPSDT, more small rural LHDs contracted with other providers than other LHDs (Table 1).

IMPLICATIONS

In general, LHDs serving rural communities tend to provide more direct services than their urban counterparts, especially large rural LHDs. Among rural LHDs, there appears to be a capacity difference between large and small rural LHDs, with larger rural LHDs providing a broader array of services. This is particularly relevant given the most recent recommendations by the IOM that call on LHDs to develop outside capacity for clinical services delivery and shift focus to providing more population-based services. While this

may be feasible in urban communities, many LHDs operating in rural communities with historically deficient primary care systems may find this transition of services extremely difficult. Interestingly, large rural LHDs also tend to report additional community provider capacity for providing similar services, particularly maternal and child health services.

Perhaps the more salient question is: Should these LHDs withdraw clinical services? The evidence examining the impact of these transitions on services in rural communities is limited, but some research suggests this could be damaging in rural communities. The existing capacity to absorb the increased demand for services as these transitions occur remains a point of discussion.[5] Large rural LHDs include towns of 10,000–49,999, presumably large enough to support additional providers. However, many of these communities are historically underserved, and LHDs remain a critical component of the health care safety net. Limited capacity within small rural LHDs may result in their providing fewer services, regardless of the availability of other providers within their communities. While some of these communities may be served by Federally Qualified Health Centers and Rural Health Clinics, many are likely to experience a lack of access and services that could impact the health and wellbeing of individuals within these communities. Rural LHDs may find with larger insured population, there is the potential for revenue for billable services, but it is unknown if they have the capacity to build the reimbursement infrastructure.

As the national health policy landscape and the role of local public health within the larger health delivery system continue to shift, these findings provide valuable information on the current status of clinical service provision among LHDs, particularly those in rural and underserved communities.

SUMMARY BOX

What is already known about this topic? Per IOM reports, LHDs' direct service provision is being eclipsed by a shift toward more population-based public health services.

What is added by this report? Rural LHDs, particularly those serving larger populations (>10,000), were found to provide more direct healthcare services than their urban counterparts. While large rural LHDs report greater community capacity among other area providers to provide direct services, smaller rural LHDs lack both capacity and availability of other community providers to fill the resulting void.

What are the implications for public health practice, policy, and research? Limited access and service lines already adversely impact small rural communities, without policy provisions for underserved communities their health may further deteriorate.

REFERENCES

1. Institute of Medicine. Committee on Assuring the Health of the Public in the 21st Century. The Future of the Public's Health in the 21st Century. National Academy Press, 2003.

2. Institute of Medicine (US). Committee on Public Health Strategies to Improve. For the Public's Health: Investing in a Healthier Future. National Academies Press, 2012.

3. National Association of County and City Health Officials, Officials NA of C and CH. 2013 National Profile of Local Health Departments. Washington DC, 2014. http://www.naccho.org.

4. Ingram DD, Franco SJ. 2013 NCHS Urban-Rural Classification Scheme for Counties. Vital Heal Stat 2. 2014;(166):1–81.